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STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

BIBLIOGRAPHY OF MARINE GEOLOGY AND OCEANOGRAPHY, CALIFORNIA COAST

SPECIAL REPORT 44

1955

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29. Geology and ore deposits of the Afterthought mine, Shasta County, California, by John P. Albers. 1953. 18 pp., 6 pls., 9 figs. Price 75¢.

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37. Rosamond uranium prospect, Kern County, California, by George W. Walker. 1953. 8 pp., 5 figs. Price 25¢

38. Geology of the Silver Lake talc deposits, San Bernardino County, California, by Lauren A. Wright. 1954. 30 pp., 4 pls., 18 figs. Price $1.00.

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40. Geology and mineral deposits of the Calaveritas quadrangle, Calaveras County, California, by Lorin D. Clark. 1954. 23 pp., 2 pls., 6 figs. Price $1.75.

41. Geology of the Angels Camp and Sonora quadrangles, Calaveras and Tuolumne Counties, California, by John H. Eric, Arvid A. Stromquist, and C. Melvin Swinney. 1954. 55 pp., 4 pls., 21 figs. Price $3.75.

42. Geology and mineral deposits in the Ubehebe Peak quadrangle, Inyo County, California, by James F. McAllister. 1955. 64 pp., 3 pls., 26 figs. Price $2.00.

43. Geology of a portion of the Elsinore fault zone, California, by John F. Mann Jr. ____ pp., 2 pls., 5 figs. Price 75¢.

44. Bibliography of marine geology and oceanography, California Coast, by Richard D. Terry. 146 pp., 2 figs. Price 75¢.

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BIBLIOGRAPHY OF MARINE GEOLOGY AND OCEANOGRAPHY, CALIFORNIA COAST

By RICHARD D. TERRY

Price 75 cents

BIBLIOGRAPHY OF MARINE GEOLOGY AND OCEANOGRAPHY, CALIFORNIA COAST *

By Richard D. Terry

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INTRODUCTION

The general fields covered by this bibliography include: sedimentation, submarine topography, beach erosion and its control, marine engineering problems, coastal sand dunes, tideland petroleum developments, marine geophysics (including seismology and tsunamis), salt water intrusion, physical and chemical oceanography. References on marine biology and meteorology have been restricted to those which mention biology and meteorology in a discussion of other oceanographic problems. For example, plankton have a profound effect upon the chemistry of sea water and to some extent upon the physical characteristics (i.e. transparency). In addition, plankton contribute to bottom sediments and often make major physical-chemical changes in sediments after deposition. Burrowing, boring, and fouling organisms likewise are of interest, so a few selected references on these have been included. Marine terraces are a marine geological problem and, therefore, have been included; however, no general references on coastal geology have been cited. Geology and paleontology of the various offshore islands of California and Mexico are included as they are frequently used in submarine geological interpretations.

In addition to the restriction of certain topics discussed above, references to other branches of science closely allied to marine geology and oceanography which are covered incompletely include: terrestrial magnetism, coastal engineering, and tideland petroleum developments. Perhaps hundreds of references exist in numerous engineering and petroleum periodicals, but are not included because only a few important articles occur amidst hundreds of pages of notes, news stories, popular accounts, and advertising.

* University of Southern California, Allan Hancock Contribution. No. 154. Manuscript submitted for publication January, 1955.

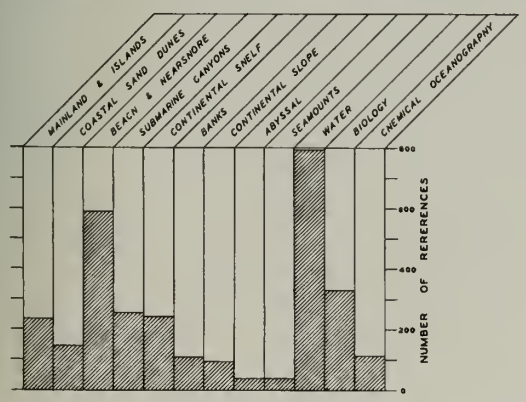

Figure 1.

Figure 1 shows the distribution of references concerning major environments. In general, the number of references decreases as the depth of water in the environments increases. The number of references on chemical oceanography comprise only a small percentage of the bibliography and there is reason to believe that the lack of references is due to the relatively small amount of research in this field. Figure 2 shows the distribution of references for each year. It is apparent that a slightly increasing number of articles was published each year up to about 1920, after which the number of references increased rapidly, excepting during World War II. The sharp rise can be attributed partly to the development of sonic sounding equipment in the early 1920's.

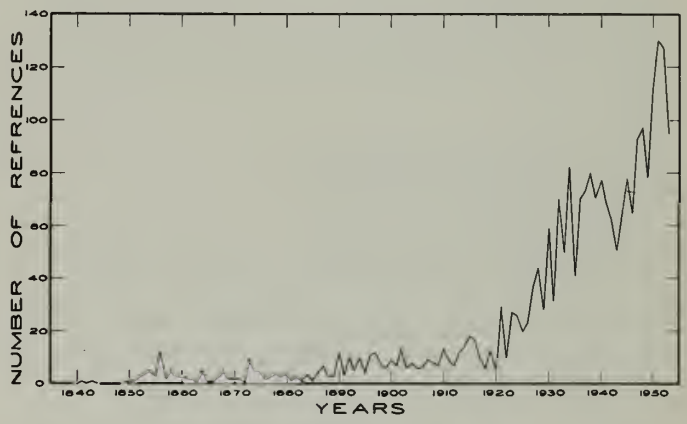

Figure 2.

If the titles of references are the only basis for inclusion or exclusion in a bibliography, a large number of references will probably be overlooked. In order to get an indication of the number of references that would be missed by using titles as the criteria for inclusion in this bibliography, 648 references from nine journals were systematically scanned and placed in three categories as follows: (1) Approximately 37.3 percent of the references had titles containing information that related directly to the region covered by the bibliography, i.e., from the Oregon-Washington border to Central America and midway to the Hawaiian Islands; (2) more than half, or 53.6 percent, of the references had general titles that gave a hint of subjects which might apply to the region; however, each reference in this category had to be read or scanned in order to determine if the reference should be included; and (3) approximately 9.1 percent of the titles gave no indication whatsoever of the region covered and would have been missed. An evaluation of these titles could have been attained only through checking reference citation, through accidental re-discovery, or through a systematic search of the literature.

This bibliography was compiled by a systematic check of a few selected key journals. In addition, countless other books, indexes, bibliographies, theses, reprints, library card files, and unpublished data were checked.

The following is a list of serials that were systematically checked; that is, each page was scanned, regardless of the titles of articles. The list does *not* include hundreds of volumes of other periodicals, etc., that were only partially scanned.

American Association of Petroleum Geologists Bulletin
Allan Hancock Foundation, University of Southern California, publications and contributions.
American Journal of Science (1900-1954)
Association d'Océanographie Physique, Union Géodésique et Geophysique Internationale, Procès-Verbaux
California Academy of Sciences, Proceedings and Transactions.
Deep-Sea Research
Ecological Monographs
Geological Society of America, Bulletins and Proceedings
Journal du Conseil pour l 'Exploration de la Mer
Journal of Geology
Journal of Geomorphology
Journal of Marine Research
Journal of Sedimentary Petrology
National Research Council Bulletins
National Research Council Treatise on Marine Ecology as Related to Paleontology
National Research Council Treatise on Sedimentation
Pacific Discovery
Pacific Science Congress Proceedings (1st to 6th conference)
Proceedings on Coastal Engineering (1st to 3rd conference)
Scripps Institution of Oceanography, Bulletins, Reports, and contributions
Shore and Beach
Theses:
  California Institute of Technology
  Scripps Institution of Oceanography
  Stanford University
  University of California, Berkeley
  University of California, Los Angeles
  University of Southern California
University of California, Berkeley, Fluid Mechanics Laboratory
University of California Publications in Geography
University of California Publications in Geology
U. S. Army, Corps of Engineers, Beach Erosion Board Bulletin and Technical Memoranda.
U. S. Navy, Office of Naval Research, Pasadena, reports

While it is difficult to determine the degree of completeness of a bibliography, it is believed that the approximately 2500 references listed in the bibliography probably comprise more than 95 percent of the *most important published* references on marine geology, and physical and chemical oceanography.

The style used for reference citation in this volume is that recommended by the U. S. Geological Survey. When the same reference has been published more than once, the references have been combined and listed under the earliest citation. All subjects in the cross-index are then cited under the earliest date. Foreign abstracts or reviews of American articles previously published in the United States have not, as a rule, been cited in the bibliography.

An asterisk (*) following references indicates that the reference was not indexed or was only partially indexed, generally because the references were not located, were too long, or were added just before press time. No attempt was made to index books as they have such a large amount of general information. A total of many weeks was spent away from the Los Angeles region in an endeavor to locate references not in this area; however, even this was not sufficient to check all references.

In the accompanying index, marine geological subjects have been placed under one or more geographical locations, such as: Abyssal, Bank, Basin, Beach and Nearshore, Coastal Sand Dunes etc. Thus, if an article discussed "Banks", various sediment and rock types were listed under "Bank". Obviously, many of the references were extremely long and discussed a great number of subjects, some geographically, some in a general manner, while others gave locations by latitude and longitude. In such cases the topics were listed directly after the general subject or under the primary location. As a general rule, various sediment and rock types listed in the "Cross-Index" refer only to bottom material existing on the sea floor within the region covered by the bibliography. Thus, sediments and rocks of the inland or islands are not indexed; however, mineralogy and various sediment types are included for coastal sand dunes and beaches.

As a whole, the index obviously is not completely detailed, however, in some cases it probably is too complete. For example, sometimes Currents, Waves, and various sediment types have been listed when these subjects were only casually mentioned in the article.

Because bibliographies on marine geology and oceanography have been compiled for several other regions of the world, this bibliography has been restricted to the California Coast and adjacent regions. Every bibliography and major source of marine geologic and oceanographic information examined during the compilation of this bibliography has been listed in the section on "Other Bibliographies and Source Material". Several of the most important books on marine geology and oceanography also are listed in this section. In addition, as an aid toward locating unpublished or only sparsely distributed reports and data, a list of suggested sources of information has been included in this section. Additional information may be located by contacting individuals or organizations carrying out marine research or work having to do with the ocean and adjacent inland waters. It is suggested that where specific information is sought for a local region, local sources will have more information than will more distant ones.

Acknowledgments. This bibliography is made possible largely through the aid given by the Allan Hancock Foundation of the University of Southern California and Professor K. O. Emery. The Allan Hancock Foundation gave financial assistance and time from other duties in order to work on the bibliography on a more or less full-time basis. Dr. Emery not only suggested the bibliography and guided the compiler throughout, but also gave access to his own personal library and contributed scores of obscure references.

Special thanks must go to Drs. T. Clements and O. L. Bandy for their assistance. Mrs. Dorothy M. Halmos, Miss Mary E. Pippin and Mr. Morris Polan, Librarians of the Allan Hancock Foundation Library of Marine Biology and Oceanography, made every effort to aid in the location of references and helped in many ways in the development of this bibliography. Mr. H. C. Stone of Doheny Library of the University of Southern California, and the Librarians of Stanford University and Scripps Institute of Oceanography also helped locate many references. Appreciation is also expressed to Mr. W. J. Herron, Jr., U. S. Army Corps of Engineers, Los Angeles District; Dr. J. W. Johnson of the University of California at Berkeley; and Dr. J. B. Loefer of the Office of Naval Research in Pasadena, for making unpublished material available.

My wife, Mary, aided me in many ways during the long period required to compile this volume.

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Bayhead Beach - see Pocket or Bayhead Beach

Beach and Nearshore, includes beaches and immediate offshore region: Anonymous, 1882b, 1882c, 1884, 1891, 1894a, 1894b, 1915, 1916a, 1916b, 1916c, 1916d, 1916e, 1917, 1925b, 1933c, 1933d, 1933e, 1935, 1938a, 1938b, 1940b, 1940c, 1940d, 1941b, 1944a, 1945, 1949a, 1949c, 1950a, 1950b, 1950c, 1951d, 1952f, 1954b, 1954j, 1954m; Alrich, L. and Smith, H. G., 1948; Alexander, A. H., 1936; Allen, W. B., 1932; Allen, W. E., 1935; Anderson, F. M., 1896-1902, 1897; Anderson, G. E., 1926; Arnold, J. L., 1928; Arthur, R. S., 1950; Ashley, G. H., 1896; Atwill, E. R., 1942; Averill, C. V. and Others, 1946; Bache, A. D., 1852; Baldwin, E. M., 1945; Barnes, A. J., 1937; Bartlett, W. A., 1852; Bascom, W. N., 1946a, 1945b, 1947a, 1947c, 1947d, 1948a, 1950a, 1950c, 1951; Bascom, W. N., Wiegel, R. L., and Chinn, A. J., 1948; Beach Erosion Board, 1938, 1939, 1942a, 1942b, 1942c, 1946, 1947-1950, 1948a, 1948b, 1948c, 1948d, 1948e, 1948f, 1948g, 1948h, 1948i, 1948j, 1949a, 1950a, 1950b, 1951, 1952a, 1952b, 1953a, 1953b, 1953c, 1954a, 1954b, 1954c; Black, G. L., 1954; Blackman, J. W. B., 1936; Blake, W. P., 1853, 1854, 1856; Blinn, F. S., 1928; Bond, A. H., 1927; Boos, M. F.,

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P., 1935d, 1936a, 1937f, 1938a, 1938g, 1938h, 1939a, 1940c, 1942a, 1943b, 1947b, 1948b, 1949a, 1949b, 1949d, 1950b, 1950c, 1950f, 1950g, 1951a, 1951b, 1952a, 1952b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1949, 1951a, 1951b; Shepard, F. P., Inman, D. L. and Fishe R. L., 1951; Shepard, F. P. and LaFond, E. C., 1940, 1942; Shepard, F. P. and MacDonald, G. A., 1938; Sh zer, W. H., 1910; Shuler, W. R., 1951, 1952; Shumwa G. A., 1953; Sinnott, A., 1941; Smith, A. G. and Ma Kenzie, G., Jr., 1948; Smith, J. S., 1936, 1937; Sm P. A., 1938; Smith, W. D., 1919, 1930, 1933a, 1933b, 1933c; Smith, W. S. T., 1897, 1898, 1900; Somers, P. 1952; Stapleton, C. R., 1952; Stelzenmuller, W. B., 1949; Stephenson, E. L., 1945; Stevenson, R. E., 1954; Storie, R. E. and Carpenter, E. J., 1929, 1930; Stump, R. S., 1946e; Stump, R. S. and Bascom, W. N., 1947; Sverdrup, H. 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Beach and Nearshore Slope, Gradient (See also: Beach slope vs. Grain size): Anonymous, 1915, 1917, 1933e, 1938a, 1940d, 1941b; Bascom, W. N., 1946b, 1947c, 1950c; Beach Erosion Board, 1942a, 1948a, 1948b, 1948h, 1952a, 1952b, 1953c; Brown, E. I., 1939; California, University of 1952a, 1952b; Congressional Documents, 1938a, 1942b, 1949f; Crowell, J. C., 1947, 1952; Deacon, G. E. R., 1949; Dietz, R. S. and Menard, H. W., 1951b; Eaton, R. O., 1951; Emery, K. O., 1945a; Emery, K. O. and Gale, J. F., 1951; Evans, O. F., 1941; Goldberg, J., 1940; Gorsline, D. S., 1954; Grant, U. S., 1938, 1943, 1948; Hall, J. V., Jr., 1952; Handin, J. W., 1949, 1951; Handin, J. W. and Ludwick, J. C., 1949; Harts, W. W., 1901; Inman, D. L., 1949, 1950, 1953b; Isaacs, J. D., 1945d, 1945f, 1945k, 1947a; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, D. W., 1910; Johnson, J. W., 1947a, 1952; Krumbein, W. C., 1947, 1950; Lawton, C. H., 1936; Livingston, A., Jr., 1939; McKee, E. D., 1953; Marlette, J. W., 1954; Mason, M. A., 1950a, 1951; Nelson, J. W., Zinn, C. J., Strahorn, A. T., Watson, E. B. and Dunn, J. E., 1919; Nicholls, C. P. L., 1939; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951; O'Brien, M. P., 1936a, 1939, 1945b, 1946a; Olsson, Seffer, P., 1910a; Patrick, D. A., 1953; Putnam, J. A., Munk, W. H. and Traylor, M. A., 1949; Scripps Institution of Oceanography, 1944c, 1944d, 1945d; Schupp, R. D., 1953; Shepard, F. P., 1950c, 1950f; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Shuler, W. R., 1952; Sinnott, A., 1941; Smith, W. D., 1933c; Stelzenmuller, W. B., 1949; Symons, T. W., 1893; Thompson, W. F. and Thompson, J. B., 1919; Thompson, W. O., 1933, 1934, 1937; Trask, P. D., 1952a; Trask, P. D. and Scott, T., 1954; Vaughan, T. W., 1931; Verrill, G. E., 1930; Watts, G. M. and Others, 1953; Wiegel, R. L., 1947b; Woodford, A. O., 1935

Beach Conglomerate - see Cobble Beach

Beach Crest - see Berm

Beach Cusps (See also: Cobble beach, Gravel): Branner, J. C., 1900; Dietz, R. S., 1947b; Evans, O. F., 1945; Handin, J. W., 1951; Isaacs, J. D., 1945b, 1945c, 1945d; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, D. W., 1910, 1944; Johnson, J. W., 1952; Krumbein, W. C., 1947; McKee, E. D., 1953; MacDonald, G. A., Shepard, F. P. and Cox, D. C., 1947; Norris, R. M., 1951; Richardson, R. W., 1923; Schupp, R. D., 1953; Shaler, N. S., 1894; Shepard, F. P., 1935d, 1938g, 1950b, 1950c, 1950f, 1952b; Thompson, W. O., 1933, 1934, 1937; Wanless, H. R., 1950; Wiegel, R. L., 1947b; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953

Beach Cycles (See also: Cut and/or Fill): Anonymous, 1933e, 1938a, 1940d; Bascom, W. N., 1950c (beach changes); Beach Erosion Board, 1948b, 1948h, 1948i, 1948j, 1953c; California, University of, 1952b; Carpenter, F. A., 1924; Congressional Documents, 1938a, 1940a, 1942b, 1949b, 1949-1950b, 1953b; Davis, W. M., 1933; Dietz, R. S., 1947b; Eaton, R. O., 1951; Evans, O. F., 1941; Friedman, S. L., 1949; Grant, U. S., 1938, 1940; Grant, U. S. and Shepard, F. P., 1937; Hall, W. C., 1942; Inman, D. L., 1949, 1953a; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, A. G., 1940c; Krumbein, W. C., 1947, 1950; LaFond, E. C., 1938; Lang, H., 1916; Leeds, C. T., 1916, 1936; Leeds, C. T., Vanoni, V. A. and Knapp, R. T., 1934; Leypoldt, H., 1941a; Lieber, A. C., Jr., 1940; McGowan, W. C., 1916; Mason, M. A., 1949a; Nelson, J. W., Dean, W. C., Locher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Nicholson, G. F., Grant, U. S., Shepard, F. P., and Crowell, J. C., 1946; O'Brien, M. P., 1939; Orange County Planning Commission, 1941; Pardee, J. T., 1934; Revelle, R. and Shepard, F. P., 1939b; Saville, T., Jr., and Caldwell, J. M., 1953; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1944d; Shepard, F. P., 1938g, 1940c, 1950b, 1950f, 1950g; Shepard, F. P., and Inman, D. L., 1949, 1951b; Shepard, F. P. and LaFond, E. C., 1940, 1942; Smith, W. D., 1933b; Somers, P., 1952; Stelzenmuller, W. B., 1949; Storie, R. E. and Carpenter, E. J., 1930; Trask, P. D., 1952b; Whitney, P. C., 1935

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Beach Drift - see Littoral Drift

Beach Equilibrium - see Equilibrium

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Beach Width: Anonymous, 1941b; Bartlett, W. A., 1852; Beach Erosion Board, 1948h, 1948i, 1954a; Brown, E. I., 1939; Congressional Documents, 1949-1950b, 1953b; Dunkle, M. B., 1944; Grant, U. S., 1948; Handin, J. W., 1949; Johnson, A. G., 1940c, 1951; Los Angeles County Regional Planning Commission, 1946; Marlette, J. W., 1954; Martens, J. H. C., 1939; Nelson, J., Dean, W. C., Kocher, A. E., Watson, E. B., Carpenter, E. J., 1920; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1939; Orange County Planning Commission, 1941; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Shuler, W. R., 1952

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Bench - see Wave Cut Terrace

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Beryllium: Lowenstam, H. A., 1954; Revelle, R., 1935; Vaughan, T. W., 1933; Goldberg, E. D., 1954

Bicarbonates - see Carbonates

Bismuth: Revelle, R., 1935; Vaughan, T. W., 1933

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Dasher, J., Fraas, F. and Gabriel, A., 1942; Day, D. T., 1907a, 1907b; Day, D. T. and Richard, R. H., 1906; DeGroot, H., 1890; Diller, J. S., 1896, 1901, 1903; Edman, J. A., 1894, 1906; Emery, K. O., 1944, 1945a; Fraser, C. McL., 1943; Goodyear, W. A., 1873; Griggs, A. B., 1945; Griggs, A. B. and Wells, F. G., 1942; Haase, L. G., 1926; Hornor, R. R., 1918; Hundhausen, R. J., 1947; Irvine, C. D., 1908; Lakes, A., 1903a, 1903b; Lang, H., 1916; Logan, C. A., 1919; Lowell, F. L. L., 1915a, 1915b; Moore, D. G., 1951; Pardee, J. T., 1934; Paul, A. B., 1894; Stephenson. E. L., 1945; Stevenson, R. E., 1954; Sverdrup, H. U. and Staff, 1942a; Twenhofel, W. H., 1943, 1946, 1946a; Yale, C. G., 1913

Black Silt: Moore, D. G., 1951

Blowholes - see Minor Features, Rocky Coasts

Blue Mud (See also: Green mud, Mud): Arnold, J. L., 1928; Belknap, G. E., 1874; Crooke, R. C., Elvitsky, A. W. et al, 1953; Davidson, G., 1897; Hanna, G. D., 1952; Kuenen, Ph. H., 1946; Moyer, D. A., 1929b; Piggot, C. S., 1932; Revelle, R. and Emery, K. O., 1951; Shepherd, E. S., 1946; Vaughan, T. W., 1940

Bog - see Swamp

Boric Acid - see Boron

Boring Organisms (See also: Burrowing Organisms, Organisms): Becker, G. F., 1888; Blake, J., 1868b; Crooke, R. C., Elvitsky, A. W., et al, 1953; Elliott, F. E., Tressler, W. L. and Myers, W. H., 1953; Fox, D. L. and Coe, W. R., 1943; Johnson, M. W., 1948; Johnson, M. W., Everest, F. A. and Young, R. W., 1947; Louderback, G. D., 1924; Scripps Institution of Oceanography, 1953a

Rock Boring Organisms: Barrows, A. L., 1913, 1919; Butcher, W. S., 1951a; Chesterman, C. W., 1952; Cohee, G. V., 1938; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., Butcher, W. S., Gould, H. R., and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Fenton, M. A. and Fenton, C. L., 1934; Hanna, G. D., 1952; Herold, C. L., 1934; Lakes, A., 1903b; Lawson, A. C., 1893a, 1893b; MacDonald, G. A., 1934; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shumway, G., Silverman, M. and Stewart, H. B., 1954; Moore, D. G., 1951; Osmont, V. C., 1904; Putnam, W. C., 1938; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1948c, 1948d, 1949b; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shumway, G. A., 1953; Vaughan, T. W., 1936; Wilson, M. E., 1907

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Bottom Flow, i.e. Turbidity Currents. (Also see: Bottom Currents, Interflow, Turbidity Currents): Menard, H. W. and Ludwick, J. C., 1951

Bottom Friction - see Friction

Bottom Photography - see Photography

Bottom Surge - see Surge

Bottom Temperature - see Temperature

Breakwater - see Engineering

Breccia (See also: Rock): Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1948; Emery, K. O. and Shepard, F. P., 1941, 1945; Shepard, F. P., 1936f; Shepard, F. P. and Emery, K. O., 1941

Bridge - see Land Bridge, Natural Bridge, Sea Arch

Bromine (See also: Halogens): Vaughan, T. W., 1940

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By-passing of Sediment (See also: Nondeposition, Winnowing): Beach Erosion Board, 1951; Butcher, W. S., 1951a; Congressional Documents, 1953b; Dietz, R. S. and Menard, H. W., 1951b; Emery, K. O., 1952; Holzman, J. E., 1950; Revelle, R. and Shepard, F. P., 1939b; Uchupi, E., 1954

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Calcite (See also: Calcareous Sediments and Rocks, Carbonates, Limestone, Marl, Mineralogy): Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Lowenstam, H. A., 1954

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Sverdrup, H. U., 1940e; Sverdrup, H. U. and Staff, 1941 (also Ca/Cl ratio); Sverdrup, H. U. and Staff, 1942a, 1943b, (also Ca/Cl ratio), 1945b; Thompson, T. G. and Robinson, R. J., 1932; Vaughan, T. W., 1930a, 1930b, 1931, 1932b, 1940; ZoBell, C. E., 1939, 1941

Calcium Carbonate - see Carbonates

Calcium/Chloride Ratio (Ca/Cl) - see Calcium

Carbonate/Nitrogen ratio (CO_3/N) - see Carbon/Nitrogen Ratio (C/N)

Carbonates, Ca and Mg Carbonates and Bicarbonates (See also: Algae, Aragonite, Calcareous Sediments and Rocks, Calcite, Calcium, Chlorinity, Coquina, Limestone, Magnesium, Marl, Organic sediments, Shells): Chesterman, C. W., 1952; Cohee, G. V., 1938; Crouch, R. W., 1954; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., 1952; Emery, K. O., 1941b, 1946b, 1948, 1950d, 1954b ($CaCO_3$ for all environments); Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Foster, J. F., 1948; Emery, K. O. and Rittenberg, S. C., 1952 (also CO_3/N ratio); Emery, K. O. and Stevenson, R. E., 1950; Emery, K. O. and Tschudy, R. H., 1941; Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Fleming, R. H. and Revelle, R., 1939; Galliher, E. W., 1933; Gee, H., 1932; Gee, H., Greenberg, D. M. and Moberg, E. G., 1932; Goldberg, E. D., 1954; Gorsline, D. S., 1954; Graham, H. W. and Moberg, E. G., 1944; Greenberg, D. M., Moberg, E. G. and Allen, E. C., 1932; Holzman, J. E., 1950; Inman, D. L., 1953b; Lipman, C. B., 1929; Lowenstam, H. A., 1954; McEwen, G. F., 1934a; McKee, E. D., 1953; Merriam, P. D., 1949; Moberg, E. G., 1928b, 1930c; Moberg, E. G. and Harding, M. W., 1933; Norris, R. M., 1951; Revelle, R., 1935, 1937a, 1937b, 1938, 1941 (also Cl/CO_3 ratio); Revelle, R. and Emery, K. O., 1951; Revelle, R. and Fleming, R. H., 1934; Revelle, R. and Shepard, F. P., 1939b; Scripps, Institution of Oceanography, 1953e; Shepard, F. P., and Grant, U. S., 1947; Shepard, F. P. and Wrath, W. F., 1937; Sisler, F. O. and ZoBell, C. E., 1951b; Stanton, T. E., Jr., 1938; Stevenson, R. E., and Emery K. O., 1951; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnston, E. C., 1914; Sverdrup, H. U., 1939a, 1940g; Sverdrup, H. U. and Staff, 1942a; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1931b, 1932a, 1932b, 1937a, 1937b, 1939; Uchupi, E., 1954; Urry, W. D. and Piggot, C. S., 1942; Vaughan, T. W., 1930a, 1930b, 1930d, 1931, 1933, 1940; White, D., 1911; Williams, W., 1948; ZoBell, C. E., 1938, 1939, 1942a, 1942b, 1946-1947, 1947b, 1947c, 1947d; ZoBell, C. E. and Anderson, D. Q., 1936

Carbon Dioxide and Carbon Monoxide (See also: Gases): Ahlstrom, E. H., 1950; Allen, E. C., 1933; Allen, W. E., 1941c; Brongersma-Sanders, M. 1948; Bullock, F. W., 1933; Cartwright, L. D., Jr., 1928; Couch, E. B., 1915; Dietz, R. S., 1952a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., 1952; Emery, K. O., 1946b; Emery, K. O. and Rittenberg, S. C., 1952; Fox, D. L., 1950; Galliher, E. W., 1933; Gee, H., 1932; Gislén, T., 1943; Goldberg, E. D., Baker, M. and Fox, D. L., 1952; Graham, H. W. and Moberg, E. G., 1944; Greenberg, D. M., Moberg, E. G. and Allen, E. C., 1932; Hutton, W. E. and ZoBell, C. E., 1949; Krumbein, W. C., 1942; McClendon, F. F., Gault, C. C. and Mulholland, S., 1917; McEwen, G. F., 1915, 1919b, 1934a; Mayor, A. G., 1922; Michael, E. L., 1919, 1921; Miller, R. C., Ramage, W. D. and Lazier, E. L., 1928; Morrison, R. L., 1930; Moberg, E. G., 1925, 1928a, 1928b, 1930c; Moberg, E. G. and Allen, W. E., 1927; Revelle, R. and Fleming, R. H., 1934; Revelle, R. and Shepard, F. P., 1939b; Sisler, F. D. and ZoBell, C. E., 1951a, 1951b; Sommer, H. and Clark, F. N., 1946; Stevenson, R. E., 1954; Sverdrup, H. U., 1940e, 1940g, 1944b; Sverdrup, H. U. and Staff, 1941, 1943a; Tilden, C. A., 1925; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1934, 1939; Vaughan, T. W., 1930b, 1930d, 1932a, 1932b, 1932c, 1933, 1936; Wells, R. C., 1921; ZoBell, C. E., 1939, 1942a, 1942b, 1943, 1946b, 1946-1947, 1947b, 1947c, 1947d, 1950; ZoBell, C. E. and Feltham, C. B., 1942; ZoBell C. E., Grant, C. W. and Haas, H. F., 1943

Carbonic Acid: Emery, K. O., 1946b; McEwen, G. F., 1934a; Revelle, R., 1941; Revelle, R. and Fleming, R. H., 1934; Sverdrup, H. U. and Staff, 1941; Vaughan, T. W., 1933; Williams, W., 1948; ZoBell, C. E., 1942b, 1947b

Carbon - see Organic matter

Carbon/Nitrogen Ratio (C/N): Dill, R. F., 1952; Emery, K. O. and Rittenberg, S. C., 1951, 1952 (also CO_3/N ratio) Krumbein, W. C., 1942; Revelle, R. and Shepard, F. P., 1939b; Trask, P. D., 1931b, 1936, 1939; Trask, P. D. and Hammar, H. E., 1931

Carotenoids - see Pigments

Cavernous Sand: Emery, K. O., 1945a; Emery, K. O. and Stevenson, R. E., 1950

Cement of Sediments and Rocks (See also: Calcite, Carbonates, Limonite, Silica): Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Chesterman, C. W., 1952; Dapples, E. C., 1942; Dietz, R. S. and Emery, K. O., 1938b; Dietz, R. S., Emery, K. O., and Shepard, F. P., 1942; Emery, K. O., 1945a, 1946b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Foster, J. F., 1948; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Stevenson, R. E., 1950; Krumbein, W. C., 1942; Merriam, P. D., 1949; Revelle, R. and Emery, K. O., 1951; Shepard, F. P. and Grant, U. S., 1947

Cenozoic: Shepard, F. P., 1952a

Cesium: Thompson, T. G. and Robinson, R. J., 1932

Channels: Anonymous, 1940d, 1951b, 1952e; Beach Erosion Board, 1951, 1952b; Blake, J., 1868b; Blinn, F. S., 1928; Bowman, A., 1873; Bucher, W. H., 1940; California, University of, 1945a; Congressional Documents 1908g, 1926, 1938b, 1938d, 1941, 1949a, 1949e; Davidson, G., 1864; Davis, W. M., 1932; Emery, K. O., and Dietz, R. S., 1941; Galliher, E. W., 1933, 1935a; Herhardt, J. R. and Jehn, K. H., 1954; Gilbert, G. D., 1917; Gorsline, D. S., 1954; Gulliver, F. P., 1896; Inman, D. L., 1949 (tidal inlet); James, E. L., 1950; Lawson, J. S., 1862; LeConte, J., 1891; Louderback, G. D., 1920, 1940; McOuat, H. W., 1951; Menard, H. W., 1952; Menard, H. W. and Ludwick, J. C., 1951; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1936a (tidal inlet); Revelle, R. and Emery, K. O., 1951; Shalowitz, A. L., 1951; Shepard, F. P., 1950b, 1951e, 1952a; Shuler, W. R., 1952; Smith, W. S. T., 1897; Stevenson, R. E., 1954; Swain, F. E., 1951; Toit, A. L. du., 1940; Upham, W., 1899; U. S. Coast Survey, 1864; ZoBell, C. E. and Feltham, C. B., 1942

Beach and Nearshore: Anonymous, 1940d; Arthur, R. S., 1950; Congressional Documents, 1938b; Darrow, W. E., 1942; Davidson, G., 1873c; Emery, K. O., 1945a; Gibson, W. M., 1951; Grant, U. S., 1948; Johnson, D. W., 1910; McKee, E. D., 1953; Munk, W. H., and Traylor, M. A., 1947; Palmer, R. H., 1928; Schupp, R. D., 1953; Shepard, F. P., 1950f, 1950g; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Thompson, W. O., 1937; Tower, M. L., 1910, 1913

Submarine Canyons and Continental Slope Channels: Bucher, W. H., 1940; Buffington, E. C., 1951, 1952; Dietz, R. S., 1954; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Menard, H. W. and Ludwick, J. C., 1951; Shepard, F. P., 1936f; Shepard, F. P. and Emery, K. O., 1941

Surge Channels: Hanna, G. D., 1951, 1952; Hinds, N. E. A., 1952

Chert: Cohee, G. V., 1938; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Hanna, G. D., 1952; Shepard, F. P. and MacDonald, G. A., 1938; Shumway, G. A., 1953

Chlorides - see Chlorinity, Sulfate/Chloride Ratio

Chlorine - see Chlorinity

Chlorinity, Chlorine, Chlorides (See also: Calcium, Halogens, Sulfate/Chloride Ratio): California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography, of the University of California, and U. S. Fish and Wildlife Service, 1950; California Bureau of Sanitary

Engineering, 1952; California Department of Fish and Game, 1951; Devaputra, D. Thompson, T. G. and Utterback, C. L., 1932; Emery, K. O., 1946b, 1953a, 1954d; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Graham, H. W. and Gay, H., 1945; Harding, M. W., 1932; Hinde, H. P., 1952; Lipman, C. B., 1929; McClendon, J. F., Gault, C. C. and Mulholland, S., 1917; McEwen, G. F., 1934a; McKee, E. D., 1953; Patrick, D. A., 1950; Phelps, A., 1940; Revelle, R., 1941 (Cl/CO_3), 1950; Revelle, R. and Emery, K. O., 1951; San Diego Regional Water Pollution Control Board, 1952; Scripps Institution of Oceanography, 1950g; Schneider, W. A., 1954; Skogsberg, T., 1936; Smith, P. V., Jr., 1954; Stanton, T. E., Jr., 1938; Sverdrup, H. U., 1939a; Sverdrup, H. U. and Staff, 1942a, 1943b; Thompson, T. G. and Robinson, R. J., 1932; Tilden, C. A., 1925; Topp, E. P., 1929; Urry, W. D., and Piggot, C. S., 1942; U. S. Hydrographic Office, 1934b; Vaughan, T. W., 1940; Veach, J. A., 1859; Wooster, W. S., 1950, 1952; ZoBell, C. E., 1941

Chlorite (See also: Rock): Emery, K. O. and Tschudy, R. H., 1941

Chlorophyll: California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California, and U. S. Fish and Wildlife Service, 1950, 1951b; Graham, H. W., 1943

Chromium: Revelle, R. and Emery, K. O., 1951

Classification of Shorelines - see Shorelines

Clastics (See also: Rock): Revelle, R., 1939b

Clay (See also: Phillipsite, Red Clay): Including Clays in: Bays, Estuaries, Harbors, Lagoons, Marshes, Sloughs, Tide Flats etc; Anonymous, 1906a; Arnold, J. L., 1928; Buck, C. D., 1928; California Department of Fish and Game, 1951; California Department of Public Health, 1951; Collins, L. B., 1931; Congressional Documents, 1940e; Coxe, L. C., 1949; Crooke, R. C., Elvitsky, A. W. et al, 1953; Dapples, E. C., 1942; Dietz, R. S., 1941; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Gould, H., 1948; Galliher, E. W., 1932b, 1935a, 1935c; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Hoover-Young San Francisco Bay Bridge Commission, 1930; Inman, D. L., 1949; Kelley, W. P. and Liebig, G. F., Jr., 1934; Lawson, A. C., 1914; Louderback, G. D., 1940; McKee, E. D., 1953; MacGinitie, G. E., 1927, 1935; Menard, H. W. and Ludwick, J. C., 1951; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Putnam, J. A., Bermel, K. J. and Johnson, J. W., 1947; Revelle, R., 1941, 1950; Revelle, R. and Shepard, F. P., 1939b; San Diego Regional Water Pollution Control Board, 1952; Sears, C. B., 1876; Shepard, F. P., 1949d, 1951b; Sisler, F. P. and ZoBell, C. E., 1950; Smith, A. G. and MacKenzie, G., Jr., 1948; Stevenson, R. E., 1954; Trask, P. D., 1928, 1931a, 1934, 1939 (also delta), 1950; Trask, P. D. and Rolston, J. W., 1950a, 1950b; Vaughan, T. W., 1933, 1942b; ZoBell, C. E., 1938, 1942b, 1943, 1946b, 1946-1947, 1947b; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E., and Feltham, C. B., 1942

Abyssal (See also: Red Clay); Belknap, G. E., 1874a; Dietz, R. S., 1941; Goldberg, E. D., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Revelle, R., 1935, 1937a; Scripps Institution of Oceanography, 1953e; Shepard, F. P., 1950a; Urry, W. D. and Piggot, C. S., 1942

Bank: Emery, K. O., 1948; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949

Basin: Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Rittenberg, S. C., 1952; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Revelle, R., 1938, 1939b (brown clay), 1941a; Shepard, F. P., 1939d, 1940a, 1951d; Trask, P. D., 1931b (green clay)

Beach and Nearshore: Anonymous, 1915, 1916a; California, University of, 1953a, 1953b; Congressional Documents, 1953b; Griggs, A. B. and Wells, F. G., 1942; Hall, J. V., Jr., 1952; Johnson, A. G., 1935; McKee, E. D., 1953; Mason, E. H., 1930; Merriam, P. D., 1949 (coastal sand dunes); Shuler, W. R., 1952 (clay-balls); Trask, P. D., and Scott, T., 1954; Twenhofel, W. H., 1946; Vaughan, T. W., 1940

Continental Shelf: Crooke, R. C., Elvitsky, A. W. et al, 1953; Dill, R. F., 1952; Emery, K. O. and Gould, H., 1948; Galliher, E. W., 1935b; Gorsline, D. S., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; MacDonald, G. A., 1934; Moore, D. G., 1951 (also black clay); Revelle, R. and Emery, K. O., 1951 (continental borderland); Revelle, R. and Shepard, F. P., 1939b (continental borderland); Shepard, F. P., 1932, 1939b, 1949b; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937

Continental Slope: Dill, R. F., 1952

Submarine Canyons: Cohee, G. V., 1938; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Marlette, J. W., 1954; Shepard, F. P., 1933c, 1948b, 1953; Shepard, F. P. and Emery, K. O., 1941; Woodford, A. O., 1951

Claystone (See also: Clay, Mudstone, Rock): Butcher, W. S., 1951a

Cliff Erosion: Anonymous, 1916a, 1938a, 1940c; Allen, W. E., 1941a; Ashley, G. H., 1931; Bascom, W. N., 1946a; Beach Erosion Board, 1948i, 1953c; Bruff, S. C., 1946; Buwalda, J., 1936; Congressional Documents, 1942b, 1949b, 1949f; Couch, E. B., 1915; Davis, W. M., 1932; Davis, W. M., Putnam, W. C. and Richards, G. L., Jr., 1931; Diller, J. S., 1902; Emery, K. O., 1941b, 1946b, 1954a; Emmonds, S. F. and Merrill, G. P., 1894; Fairbanks, H. W., 1897, 1904; Goldberg, J., 1940; Grant, U. S. and Shepard, F. P., 1937, 1938b; Hall, W. C., 1942; Handin, J. W., 1949; Hanna, M. A., 1926; Hannum, G. W. T., 1944; Harts, W. W., 1911; Hertlein, L. G. and Grant, U. S., 1944; Inman, D. L., 1953a; Isaacs, J. D., 1947a; Lakes, A., 1903b; Lawson, A. C., 1893b, 1914; Leypoldt, H., 1941b; Leeds, C. T., 1936; Leonard, A. G., 1925; Livingston, A., Jr., 1939; Louderback, G. D., 1940; McKee, E. D., 1953; McLellan, M. E., 1925; O'Brien, M. P., 1939; O'Shaughnessy, M. M., 1924; Page, G. B., 1950; Place, J. L., 1952; Putnam, W. C., 1938; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Shepard, F. P., 1941a, 1943b, 1950b, 1950c, 1950g; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1951b; Shuler, W. R., 1951, 1952; Smith, W. D., 1930; Smith, W. S. T., 1897, 1900; Stevenson, R. E., 1954; Swinnerton, A. C., 1927; Trask, P. D., 1952b; Vaughan, T. W., 1930a, 1930b, 1930c, 1931, 1932d; Walters, L., 1953; Wanless, H. R., 1950; Williams, W., 1948; Wilson, M. E., 1907; Yates, L. G., 1890b

Cliff Erosion, Rate: Anonymous, 1938a; Emery, K. O., 1941b; Grant, U. S. and Shepard, F. P., 1937, 1938b; Handin, J. W., 1949, 1951; Hertlein, L. G. and Grant, U. S., 1944; Inman, D. L., 1953a; Krumbein, W. C., 1947; Lakes, A., 1903b; Lawson, A. C., 1893a; Leeds, C. T., 1936; Livingston, A., Jr., 1939; O'Brien, M. P., 1936a, 1939; Schupp, R. D., 1953; Shepard, F. P., 1943b, 1949b; Shepard and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1951b; Vaughan, T. W., 1930a, 1930c, 1931, 1932d

Coagulation (See also: Precipitation): Revelle, R. and Shepard, F. P., 1939b

Coastal Plain: Cotton, C. A., 1942; Gulliver, F. P., 1896; King, R. E., 1939

Coastal Sand Dunes: Anonymous, 1938a, 1950d, 1950e, 1954m; Aldrich, L. and Smith, H. G., 1948; Alexander, C. S., 1950; Anderson, F. M., 1896-1902; Baldwin, E. M., 1945; Bascom, W. N., 1947c, 1947d, 1950c; Beach Erosion Board, 1948a, 1948h, 1948i, 1952a, 1953c, 1954a; Beal, C. H., 1915; Blake, J., 1868a; Blake, W. P., 1853, 1856; Bowers, S., 1878; Bremner, C. St. J., 1933 (dune structure); Butler, M. M., 1936; California, University of, 1952a; Campbell, M. P., 1915; Carpenter, E. J. and Storie, R. E., 1929; Cockerell, T. D. A., 1938a; Congressional Documents, 1940a, 1949b, 1953b; Cooper, W. S., 1927, 1934; Darton, N. H., 1921; Davidson, G., 1864, 1897; Diller, J. S., 1896, 1898, 1901; Dunkle, M. B., 1950; Eaton, R. O., 1951; Eckis, R., 1934; Emery, K. O., 1945a, 1952a, 1954b; Emery, K. O. and Stevenson, R. E., 1950; Fairbanks, H. W., 1904;

Gibbs, R. E., 1900; Gilbert, G. K., 1917; Goldberg, J., 1940; Gorsline, D. S., 1954; Grant, U. S., 1944; Grant, U. S. and Sheppard, W. E., 1939; Griesbach, J. O., 1947; Gulliver, F. P., 1896; Hall, W. C., 1942; Handin, J. W., 1949, 1951; Hinds, N. E. A., 1952; Holmes, L. C. and Pendleton, R. L., 1918; Hoover, J. W., 1932; Inman, D. L., 1949; Isaacs, J. D., 1945d, 1945k; Isaacs, J. D. and Bascom, W. N., 1947, 1949; Ives, R. L., 1951; James, E. L., 1950; Johnson, A. G., 1935, 1940c (as source of beach material), 1951; Johnson, J. W., 1949a; Keller, W. D., 1941, 1945; Kemnitzer, L. E., 1933; Kniffen, F. B., 1932; Krumbein, W. C., 1947; Lawson, A. C., 1914; Lawson, J. S., 1862; Lawton, C. H., 1936; Leeds, C. T., 1936; Lian, H. M., 1952; Livingston, A., Jr., 1939; MacDonald, G. A., 1934; McKee, E. D., 1953; McKee, R. and Schoth, H. A., 1941; McLaughlin, W. T. and Brown, R. L., 1943; Marlette, J. W., 1954; Marshall, W. C., 1934; Martens, J. H. C., 1939; Mason, M. A., 1950b; Melton, F. A., 1940; Mendenhall, W. C., 1905; Merriam, P. D., 1949; Messner, W. E., 1954; Morrison, R. L., 1930; Nelson, E. W., 1922; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Nelson, J. W., Zinn, C. J., Strahorn, A. T., Watson, E. B. and Dunn, J. E., 1919; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951, 1952; O'Brien, M. P., 1936a, 1939; Olsson-Seffer, P., 1908, 1910a (types of dunes), 1910b; Page, G. B., 1950 (profiles); Pierce, W. D. and Pool, D., 1938; Place, J. L., 1952; Purer, E. A., 1936 (origin), 1942; Reed, R. D., 1930b; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Sanford, J. J., 1908; Sears, C. B., 1876; Shepard, F. P., 1939a, 1949b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Sinnott, A., 1941; Smith, P. A., 1940; Smith, W. D., 1933a, 1933b, 1933c; Shaveley, P. D., Jr., 1951; Stock, C., 1935, 1936; Storie, R. E. and Carpenter, E. J., 1929, 1930; Storie, R. E., Cole, R. C., Owen, B. C., Koehler, L. F., Anderson, C. A., Leighty, W. J. and Retzer, J. L., 1944; Symons, T. W., 1893; Thompson, W. O., 1934, 1937; Twenhofel, W. H., 1946; Vickery, F. P., 1927a; Wanless, H. R., 1950; Weaver, C. E., 1949; White, D., 1911; Wiggins, I. L., 1929 (?); Woodring, W. P., Bramlette, M. N. and Kew, W. S. W., 1946; Yates, L. G., 1892

Coastal Sand Dune Movement (See also: Wind Transport): Blake, J., 1868a, 1868b; Cambell, M. R., 1915; Leeds, C. T., 1936 (wind blown sand, sand drift); Smith, W. D., 1933c

Cobalt: Goldberg, E. D., 1954; Lowenstam, H. A., 1954; Scripps Institution of Oceanography, 1953e

Cobble Beach, Shingle Beach (See also: Beach Cusps, Gravel): Anonymous, 1938a; Anderson, C. A., 1950; Ashley, G. H., 1896; Bartlett, W. A., 1852; Beach Erosion Board, 1948i, 1952a; California, University of, 1952a; Carsola, A. J., and Dietz, R. S., 1952; Cartwright, L. D., Jr., 1928; Clements, T. and Dana, S. W., 1944; Congressional Documents, 1938a, 1940a, 1942b, 1949f, 1953b; Cook, E. H., 1908; Couch, E. B., 1915; Davis, W. M., 1932; Emery, K. O. and Tschudy, R. H., 1941 (also beach conglomerate); Haase, L. G., 1926; Hall, W. C., 1938; Handin, J. W., 1949; Hoover, J. W., 1932a; Horton, D. F., 1948; Inman, D. L., 1953b; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, D. W., 1910; Johnson, W. M., 1856; Krumbein, W. C., 1947; Lawson, A. C., 1894; Leeds, C. T., 1916, 1936; McKee, E. D., 1953; Marlette, J. W., 1954; Martens, J. H. C., 1939; Mason, M. A., 1942; Norris, R. M., 1951; Paguirigan, F., 1941; Putnam, W. C., 1938; Richardson, R. W., 1923; Ritter, W. E., 1901; Schupp, R. D., 1953; Shepard, F. P., 1935d, 1938g, 1950b, 1950g; Smith, W. S. T., 1898; Thompson, W. O., 1937; Walters, L., 1953; Whitney, J. D., 1865; Willis, B., 1900 (beach conglomerate)

Cobbles - see Gravel

Colloids, including Colloidal Sediments (See also: Precipitation of Sediments, various types of colloidal sediments): Allen, W. E., 1941d; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1946b; Emery, K. O. and Dietz, R. S., 1950; Fox, D. L., 1950; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Galliher, E. W., 1933; Goldberg, E. D., 1954; Revelle, R., 1935, 1937b, 1950; Revelle, R. and Emery, K. O., 1951; Scripps Institution of Oceanography, 1953e; Trask, P. D., 1931a; Urry, W. D. and Piggot, C. S., 1942; ZoBell. C. E., 1938, 1939, 1942b, 1947b; ZoBell, C. E. and Anderson, D. Q., 1936

Collophane: Carsola, A. J. and Dietz, R. S., 1952; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a, 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Holzman, J. E., 1950; Uchupi, E., 1954

Color of Sediments (See also: various colors of sediments): Anonymous, 1954m; Cartwright, L. D., Jr., 1928; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Galliher, E. W., 1935c; Gorsline, D. S., 1954; Holzman, J. E., 1950; Krumbein, W. C., 1942; Moore, D. G., 1951; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Nelson, J. W., Zinn, C. J., Strahorn, A. T., Watson, E. B. and Dunn, J. E., 1919; Norris, R. M., 1951; Page, G. B., 1950; Revelle, R. and Shepard, F. P., 1939b; Stevenson, R. E., 1954; Trask, P. D. and Scott, T., 1954; ZoBell, C. E., 1938

Compaction: Cohee, G. V., 1938; Dill, R. F., 1952; Emery, K. O., 1945a, 1948, 1950e; Emery, K. O., and Dietz, R. S., 1941; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Krumbein, W. C., 1942, 1947; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Piggot, C. S. and Urry, W. D., 1942; Revelle, R., 1950; Shepard, F. P., 1949b; Stockman, L. P., 1949b; Sverdrup, H. U. and Staff, 1941; Trask, P. D., 1931a; Varney, F. M. and Redwine, L. E., 1937; ZoBell, C. E., 1944

Competance: Handin, J. W. and Ludwick, J. C., 1949

Concentration of Sediments in the Surf Zone (See also: Beach Cycles, Littoral Drift, Rip Currents, Suspended Sediments, Transport of Sediments): Grant, U. S., 1943; Handin, J. W., 1949; LaFond, E. C., 1939b; Marlette, J. W., 1954; Munk, W. H., 1949b; Shepard, F. P., 1942a, 1950c, 1950f, 1950g; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and LaFond, E. C., 1940, 1942; Watts, G. M. and Others, 1953

Concrete: Schaufele, H. J., 1951

Concretions (See also: Barite, Manganese, Nodules, Oolites, Phosphorite): Emery, K. O., 1945a, 1946b, 1950a, 1950d; Emery, K. O. and Shepard, F. P., 1945; Galliher, E. W., 1933; Kemnitzer, L. E., 1933; Krumbein, W. C., 1942; Lakes, A., 1903b; Revelle, R. and Emery, K. O., 1951; Shepard, F. P., 1949b, 1950b; Shepard, F. P. and Emery, K. O., 1941; Wooster, W. S., 1951

Condensation (See also: Fog, Meteorology): Sverdrup, H. U., 1939c

Conduction: Goldberg, E. D., 1954 (electrical conductivity); Leipper, D. F., 1947; Lipman, C. B., 1929; McEwen, G. F., 1929, 1933, 1934a, 1937b; Mayor, A. G., 1922 (electrical conductivity); Moberg, E. C., 1928a, 1930c; Scripps Institution of Oceanography, 1953e (thermal conductivity); Sverdrup, H. U., 1938a

Conglomerate (See also: Cobble Beach): Butcher, W. S., 1951a; Cohee, G. V., 1938; Clark, B. L., 1931; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., Butcher, W. S., Gould, H. R., and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Natland, M. L., 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Hanna, G. D., 1952; Hinds, N. E. A., 1952; Landes, K. K., 1952a; McKee, E. D., 1953; Shepard, F. P., 1935c, 1936f, 1941a, 1949b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937; Thompson, W. O., 1937; Trask, P. D., 1931b; Uchupi, E., 1954; Vaughan, T. W., 1936, 1940; Willis, B., 1900

Consolidation, Lithification: Trask, P. D., 1931a; Trask, P. D. and Rolston, J. W., 1950b

Continental Borderland: Butcher, W. S., 1951a; Congressional

Documents, 1953b; Dietz, R. S., 1938, 1952a, 1952b; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Eardley, A. J., 1954; Emery, K. O., 1952a; Emery, K. O. and Rittenberg, S. C., 1952; Handin, J. W., 1949; Hinds, N. E. A., 1952; Holzman, J. E., 1950; Krynine, P. D., 1937; Ludwick, J. C., Jr., 1950; Norris, R. M., 1951; Revelle, R. and Emery, K. O., 1951; Revelle, R. and Shepard, F. P., 1939b; Schupp, R. D., 1953; Shepard, F. P., 1937c, 1948c, 1951a; Shepard, F. P. and Emery, K. O., 1941; Shumway, G. A., 1953; Sverdrup, H. U., 1939a; Uchupi, E., 1954; Upson, J. E., 1951; Wisser, E., 1954

Continental Drift: Bucher, W. H., 1939; Gutenberg, B., 1936b; Ma, T. Y. H., 1952

Continental Shelf: Anonymous, 1938a, 1940d, 1946a, 1950b, 1952e, 1954j; Agassiz, A., 1905; Allen, W. E., 1923f, 1945; Anderson, F. M., 1896-1902; Armstrong, T. A., 1954; Bandy, O. L., 1953a; Beach Erosion Board, 1948h, 1948i, 1952b, 1954a; Belknap, G. E., 1874b; Bucher, W. H., 1940; Buffington, E. C., 1951, 1952; Butcher, W. S., 1951a; Bullard, E. C., 1940; California, University of, 1954b; Chesterman, C. W., 1952; Clark, B. L., 1931; Clary, W. W., 1949; Cohee, G. V., 1938; Congressional Documents, 1953b; Crooke, R. C., Elvitsky, A. W., et al, 1953; Crowell, J. C., 1947, 1952; Daly, R. A., 1939; Davidson, G., 1875a, 1875b, 1887, 1897; Davis, W. M., Putnam, W. C. and Richards, G. J., Jr., 1931; Defant, A., 1950a; Dietz, R. S., 1938, 1951 (continental terrace), 1952a, 1952b; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, R. S. and Menard, H. W., 1951a, 1951b; Dill, R. F., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Diller, J. S., 1902; Dunham, J. W., 1951; Dunkle, M. P., 1944, 1950; Eaton, J. E., 1932, 1943; Eaton, R. O., 1951; Emery, K. O., 1947b, 1947c, 1950c, 1951, 1952a, 1952b, 1954b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Rittenberg, S. C., 1952; Emery, K. O. and Shepard, F. P., 1941, 1945; Emmonds, S. F. and Merrill, G. P., 1894; Ewing, G. C., 1950c; Fairbanks, H. W., 1897, 1904; Fisher, R. L. and Mills, R., 1952; Fleming, R. H., 1937-1938; Ford, J. L. C., 1942; Fox, D. L., 1937; Gale, H. S. and Others, 1932; Galliher, E. W., 1935a, 1935b; Garrison, L. E. and Takasaki, K. L., 1950; Gorsline, D. G., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Gross, H. E., 1945; Gutenberg, B., 1941a; Handin, J. W., 1949; Handin, J. W. and Ludwick, J. C., 1949; Hanna, G. D., 1952; Hansen, H. A. and Pemberton, J. R., 1950; Hershey, O. H., 1902, 1903; Hill, R. T., 1928b; Hinds, N. E. A., 1952; Hobbs, W. H., 1921; Holway, R. S., 1905; Horrer, P. L., 1950; Hughes, R. V., 1932; Inman, D. L., 1949, 1950, 1953b; Jeffreys, H., 1934; Jenkins, O. P., 1943a; Kuenen, Ph. H., 1947; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; Landes, K. K., 1952a; Lawson, A. C., 1893a, 1893b, 1924, 1939, 1950; LeConte, J., 1891; Leeds, C. T., 1936; Littlehales, G. W., 1932a; Louderback, G. D., 1930; Lukens, R. R., 1933; McEwen, G. F., 1927; MacDonald, G. A., 1934; Ma, T. Y. H., 1952; Marlette, J. W., 1954; Maxson, J. H., 1932; Meinesz, F. V. A., 1941; Miller, J. C., 1953; Miller, R. L., 1954; Mitchell, G. D., 1928; Moore, D. G., 1951; Mouton, M. W., 1952; Norris, R. M., 1951; O'Brien, M. P., 1936a, 1939; Pardee, J. T., 1934; Patton, R. S., 1930; Pratt, W. E., 1947; Putnam, W. C., 1937b; Revelle, R., 1938, 1950; Revelle, R., and Shepard, F. P., 1939a, 1939b, 1943; Richter, C. F., 1940; Richter, C. M., 1887; Richardson, R. W., 1923; Rothwell, W. T. J., 1946; Rude, G. T., 1934; Sanford, J. J., 1908; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1952i; Shaler, N. S., 1892, 1895; Shepard, F. P., 1932, 1933a, 1933b, 1933c, 1934a, 1934b, 1935a, 1935e, 1937b, 1937d, 1937e, 1937f, 1937g, 1938f, 1939b, 1939d, 1940a, 1940c, 1940d, 1940e, 1941a, 1941b, 1942b, 1943a, 1947b, 1948c, 1949b, 1949c, 1949d, 1950e, 1951a, 1951e, 1952a, 1953; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P. and Inman, D. L., 1949, 1951b; Shepard, F. P. and MacDonald, G. A., 1934, 1938; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Shuler, W. R., 1952; Smith, W. D., 1919, 1933a, 1933b, 1933c; Smith, W. S. T., 1900, 1902; Sneddon, R., 1948; Spencer, J. W., 1890; Sverdrup, H. U., 1939a, 1940g, 1944b; Sverdrup, H. U. and Staff, 1941; Thompson, W. C., 1949 Toit, A. L., du., 1940; Trask, P. D., 1930, 1931b, 1939; Treasher, R. C., 1937; Udden, J. A., 1914; Updegraff, D. M., 1948; Upham, W., 1899; Vaughan, T. W., 1940; Ward, H. A., 1952; Weeks, L. G., 1952; Wharton, M., 1948; Woodford, A. O., 1951; Woodring, W. P., 1938a; Woollard, G. P., 1951; ZoBell, C. E., 1938

Continental Shelf, Glaciation on: Davidson, G., 1875a; Shepard, F. P., 1932

Continental Shelf, Gradient, Slope: Anonymous, 1938a; Beach Erosion Board, 1952b; Butcher, W. S., 1951a; Congressional Documents, 1953b; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Inman, D. L., 1950; Lawson, A. C., 1893a, 1924, 1950; Leeds, C. T., 1936; MacDonald, G. A., 1934; Marlette, J. W., 1954; Moore, D. G., 1951; Norris, R. M., 1951; O'Brien, M. P., 1936a, 1939; Putnam, W. C., 1937b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shuler, W. R., 1952; Smith, W. D., 1933c; Smith, W. S. T., 1900; Woodford, A. O., 1951

Continental Shelf, Origin:

Erosion (subaerial or submarine erosion, generally by waves and currents): Bucher, W. H., 1940; Davidson, G., 1875a; Dietz, R. S., 1951, 1952b; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, R. S. and Menard, H. W., 1951a and 1951b (also includes the continental slope); Eaton, R. O., 1951; Fairbanks, H. W., 1897; Lawson, A. C., 1893a; MacDonald, G. A., 1934; Miller, J. C., 1953; Pratt, W. E., 1947; Schupp, R. D., 1953; Shepard, F. P., 1949d, 1950e; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Smith, W. D., 1933b; Smith, W. S. T., 1900, 1902

Sedimentation: Bucher, W. H., 1940; Bullard, E. C., 1940; Dietz, R. S., 1951, 1952b; Dietz, R. S. and Menard, H. W., 1951a and 1951b (also includes the continental slope); Eaton, R. O., 1951; Fairbanks, H. W., 1897; Miller, J. C., 1953; Pratt, W. E., 1947; Shepard, F. P., 1938f, 1940e, 1949d; Shepard, F. P. and Emery, K. O., 1945; Shepard, F. P. and MacDonald, G. A., 1938; Smith, W. S. T., 1900

Structural, including faulting and warping: Bullard, E. C., 1940; Dietz, R. S., 1951, 1952b; Emery, K. O., 1950c; Lawson, A. C., 1924, 1939; Miller, J. C., 1953; Pratt, W. E., 1947; Shepard, F. P., 1940e; Toit, A. L. du, 1940 (also includes the continental slope)

Other: Davidson, G., 1875a; Dietz, R. S. and Menard, H. W., 1951a, 1951b; Eaton, R. O., 1951; Miller, J. C., 1953; Toit, A. L. du, 1940

Continental Shelf Profiles: Anonymous, 1938a; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952; Inman, D. L., 1950; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; Lawson, A. C., 1924; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937 (insular shelf)

Continental Shelf, Width: Beach Erosion Board, 1948h, 1948i; Belknap, G. E., 1874b; Congressional Documents, 1953b; Dietz, H. W. and Menard, H. W., 1951b; Dunkle, M. B., 1950; Fairbanks, H. W., 1897; Ford, J. L. C., 1942; Handin, J. W., 1949; Hansen, H. A. and Pemberton, J. R., 1950; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Lawson, A. C., 1924, 1950; Leeds, C. T., 1936; Marlette, J. W., 1954; Miller, J. C., 1953; Moore, D. G., 1951; Pardee, J. T., 1934; Pratt, W. E., 1947; Sanford, J. J., 1908; Shepard, F. P., 1939b, 1940c; Shuler, W. R., 1952; Smith, W. D., 1933b; Smith, W. S. T., 1900, 1902; Sneddon, R., 1948; Sverdrup, H. U. and Staff, 1941; Wharton, M., 1948

Continental Slope: Beal, C. H., 1945; Bucher, W. H., 1940; Butcher, W. S., 1951a; Buffington, E. C., 1951, 1952; Carsola, A. J. and Dietz, R. S., 1952; Chesterman, C. W., 1952; Clements, T. and Emery,

K. O., 1947; Cochrane, J. D. and Arthur, R. S., 1948; Cohee, G. V., 1938; Congressional Documents, 1953b; Crowell, J. C., 1952; Daly, R. A., 1939; Davis, W. M , 1933; Dietz, R. S., 1938, 1951, 1952a, 1952b; Dietz, R. S., Emery, K. O., and Shepard, F. P., 1942; Dietz, R. S. and Menard, H. W., 1951a, 1951b; Dill, R. F., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Diller, J. S., 1915; Eardley, A. J., 1954; Emery, K. O., 1948, 1950c, 1951, 1952b, 1953a, 1954a, 1954b, 1954d; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Rittenberg, S. C., 1952; Emery, K. O. and Shepard, F. P., 1945; Fleming, R. H., 1937-1938; Handin, J. W., 1949; Hanna, G. D., 1952; Hansen, H. A. and Pemberton, J. R., 1950; Hess, H. H. and MacClintock, P., 1936; Hill, R. T., 1928b; Hinds, N. E. A., 1952; Holway, R. S., 1905; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; Lawson, A. C., 1924, 1939, 1950; Littlehales, G. W., 1932a, 1932b; Ma, T. Y. H., 1952; Maxson, J. H., 1932; Menard, H. W. and Dietz, R. S., 1951; Menard, H. W. and Ludwick, J. C., 1951; Pratt, W. E., 1947; Raitt, R. W., 1949; Revelle, R. and Shepard, F. P., 1939b; Sanford, J. J., 1908; Shaler, N. S., 1895; Shepard, F. P., 1932, 1933a, 1934b, 1936c, 1936e, 1936f, 1937g, 1938f, 1938i, 1939b, 1940b, 1940c, 1940d, 1940e, 1941a, 1941c, 1943a, 1950e, 1951a, 1951b, 1951e, 1952a; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P., and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Stetson, H. C., 1939; Shumway, G. A., 1953; Smith, W. S. T., 1900, 1902; Sverdrup, H. U., 1940g; Toit, A. L. du., 1940; Trask, P. D., 1939; Trask, P. D. and Hammar, H. E., 1931; Udden, J. A., 1914; Vaughan, T. W., 1940; Woodford, A. O., 1951; Wooster, W. S., 1951

Continental Slope, Coarse Material at Break in Slope: Shepard, F. P., 1944d

Continental Slope, Gradient: Dietz, R. S., 1952b; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952; Emery, K. O., 1950c; Inman, D. L., 1950; Lawson, A. C., 1924; Littlehales, G. W., 1932a, 1932b; Sanford, J. J., 1908; Shepard, F. P., 1941a; Shepard, F. P. and Beard, C. N., 1938; Shumway, G. A., 1953; Smith, W. S. T., 1900; Toit, A. L. du., 1940

Continental Slope, Origin:
Erosion: Bucher, W. H., 1940; Dietz, R. S. and Menard, H. W., 1951a and 1951b (also includes the continental shelf)
Sedimentation: Bucher, W. H., 1940; Dietz, R. S., 1951 (also includes the continental shelf); Dietz, R. S. and Menard, H. W., 1951a, 1951b; Emery, K. O., 1950c
Structural, including faulting and warping: Dietz, R. S., 1951, 1952b (also includes the continental shelf); Diller, J. S., 1915; Emery, K. O., 1950c, Landes, K. K., 1952a; Lawson, A. C., 1939, 1950; Shepard, F. P., 1940e; Toit, A. L. du, 1940
Other: Dietz, R. S., 1951; Dietz, R. S. and Menard, H. W., 1951a, 1951b; Emery, K. O., 1950c

Continental Terrace - see Continental Shelf

Convection, including Convection Currents: Brongersma-Sanders, M., 1948; Bullock, F. W., 1933; Cummings, N. W., 1950; Ewing, G. C., 1950b; McEwen, G. F., 1916, 1929, 1933, 1937b, 1937-1938; Moberg, E. G., 1930b; Revelle, R. and Shepard, F. P., 1939b; Rice, E. K., 1951; Scripps Institution of Oceanography, 1952i; Sverdrup, H. U., 1938a, 1939b, 1944b; Sverdrup, H. U. and Allen, W. E., 1939 (connection layer); Uchupi, E., 1954 (convection layer)

Convergence, Waves etc.: Arthur, R. S., 1950; Burt, W. V. and Saur, J. F. T., Jr., 1948; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California, and U. S. Fish and Wildlife Service, 1950; Cochrane, J. D. and Arthur, R. S., 1948; Congressional Documents, 1953; Dawson, E. Y., 1952; Dunham, J. W., 1951; Ewing, G. C., 1950b, 1950c; Grant, U. S., 1946; Grant, U. S. and Shepard, F. P., 1946; Handin, J. W., 1951; Horrer, 1950; Inman, D. L., 1949, 1953a; Marlette, J. W., 1954; Munk, W. H., 1948; Munk, W. H. and Anderson, E. R., 1948; Munk, W. H. and Traylor, M. A., 1947; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Peel, K. P., 1951; Scripps Institution of Oceanography, 1953c; Shepard, F. P., 1949a, 1950b, 1950c, 1950g, 1951a, 1952a; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1949, 1951a, 1951b; Shepard, F. P. and Sayner, D. B., 1953; Sverdrup, H. U., 1938a; Vaughan, T. W., 1940; Williams, E. A. and Isaacs, J. D., 1952

Cooling: Jacobs, W. C., 1949; McEwen, G. F., 1934b; Sverdrup, H. U., 1938a, 1939c

Copepods (See also: Plankton, Zooplankton): Allen, W. E., 1920, 1923f, 1927c; Bigelow, H. B. and Leslie, M., 1930; Bush, J. B., 1930; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California, and U. S. Fish and Wildlife Service, 1950; California Academy of Sciences, California Division of Fish and Game, Stanford University, Hopkins Marine Station, U. S. Fish and Wildlife Service, South Pacific Fisheries Investigation, University of California, Scripps Institution of Oceanography, 1953; Dietz, R. S., 1948; Esterly, C. O., 1911, 1912, 1923, 1928b; Johnson, M. W., 1939a; Lewis, R. C., 1927; Mason, E. H., 1930; Moberg, E G., 1925, 1928d; Murphy, H. E., 1924; Russell, F. S., 1934 (including composition of); Taylor, C. V. and Vaughan, T. W., 1934; Vaughan, T. W., 1934; ZoBell, C. E., 1942a

Copper: Ahlstrom, E. H., 1950; Marks, G. W., 1938; Revelle, R. and Emery, K. O., 1951; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; ZoBell, C. E., 1939

Coprolites: Coe, W. R., 1945; Dapples, E. C., 1942; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Fox, D. L., 1937, 1950; Fox, D. L. and Anderson, L. J., 1941; Fox, D. L., Updegraff, D. M., Novelli, G. D., 1944; Galliher, E. W., 1932, 1935a, 1935c; Phleger, F. B., 1951; Vaughan, T. W., 1933

Coquina (See also: Carbonates, Limestone, Marl, Shells): Hall, J. V., Jr., 1952; McKee, E. D., 1953

Coral Reefs - see Corals, Reefs

Corals: Anonymous, 1942; Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, R. S., Menard, H. W., and Hamilton, E. L., 1954; Durham, J. W., 1942; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Stevenson, R. E., 1950; Fraser, C. McL., 1943; Haase, L. G., 1926; Hanna, G. D., 1952; Hertlein, L. G. and Emerson, W. K., 1953; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Pease, W. H., 1868 (also coral sand); Shepard, F. P., 1932; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Emery, K. O., 1945; Uchupi, E., 1954; Vaughan, T. W., 1930d, 1931, 1940

Cores and Coring (See also: Dredging, Snapper Samples): Anonymous, 1944b; Atwill, E. R., 1942; Bartholomew, J. W. and Rittenberg, S. C., 1949; California, University of, 1953a, 1953b; Cohee, G. V., 1938; Crouch, R. W., 1951; Dietz, R. S., 1954; Dietz, R. S., Emery, K. O., and Shepard, F. P., 1942; Dill, R. F., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1952, 1954; Emery, K. O., 1954b; Emery, K. O. and Dietz, R. S., 1939, 1941; Emery, K. O. and Natland, M. L., 1952; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Emiliani, C., 1954; Ford, J. L. C., 1942; Fox, D. L., 1937, 1944a, 1944b, 1950; Fox, D. L. and Anderson, L. T., 1941; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Galliher, E. W., 1935b, 1935c; Garrison, L. E. and Takasaki, K. L., 1950; Gorsline, D. S., 1954; Harding, C. R., 1929; Hoots, H. W., 1943; Hoover-Young San Francisco Bay Bridge Commission, 1930; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Kuenen, Ph. H. and Menard, H. W., 1952; Louderback, G. D., 1920, 1940; Ludwick, J. C., Jr., 1950; MacDonald, G. A., 1934; Marlette, J. W., 1954; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937;

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Cusps - see Beach Cusps

Cut and/or Fill, Depth Changes. Generally applies to beach and nearshore and in submarine canyons. (See also: Beach Cycles; Submarine Canyon, Changes in; Turbidity Currents): Anonymous, 1938a, 1940d; Bascom, W. N., 1946d; Beach Erosion Board, 1948a, 1948j, 1949a, 1952a, 1953b, 1954b; California, University of, 1952a, 1952d, 1953a, 1953b, 1954a, 1954b; Congressional Documents, 1940a, 1953b; Dietz, R. S., 1947b; Dietz, R. S. and Menard, H. W., 1951b; Dietz, R. S., Menard, H. W. and Hamilton, E. L., 1954 (fill in deep sea); Eaton, J. E., 1943; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952 (fill in basins); Emery, K. O. and Rittenberg, S. C., 1952 (fill in basins); Frieman, S. L., 1949; Grant, U. S. and Shepard, F. P., 1937, 1938a; Hall, J. V., Jr., 1952; Harris, F. R. and Harlow, E. H., 1948; Harts, W. W., 1901; Inman, D. L., 1949, 1953a, 1953b; Johnson, D. W., 1910; Johnson, J. W., 1947b; LaFond, E. C., 1938; Moberg, E. G. and Allen, W. E., 1927; Munk, W. H., 1949b (bottom sediment movement); Norris, R. M., 1952 (shifting sand); O'Brien, M. P., 1939; Palmer, R. H., 1928 (shifting sand); Revelle, R. and Shepard, F. P., 1939b; Scripps Institution of Oceanography, 1952i, 1953f; Shepard, F. P., 1938g, 1947b, 1950c, 1950e, 1950g, 1951a; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P. and LaFond, E. C., 1940, 1942; Shepard, F. P. and MacDonald, G. A., 1938 (shifting of bottom materia Shuler, W. R., 1951, 1952; Stelzenmuller, W. B., 1949; Thompson, W. F. and Thompson, J. B., 1919; Tower, M. L., 1913; Trask, P. D., 1952a; Trask, P. D. and Scott, T., 1954

Cycles - see Beach Cycles

Dacite (See also: Igneous Rock, Rock): Butcher, W. S., 1951a Clements, T. and Dana, S. W., 1944; Emery, K. O. and Shepard, F. P., 1945; Holzman, J. E., 1950

Decomposition of Organic Matter - see Organic Matter, Decomposition of

Deeps - see Trench

Deflation - see Wind Transport

Deformation - see Warping

Degrade - see Beach Erosion

Dehydration - see Temperature of Hydration and Dehydration

Delta (See also: Submarine Canyon, Terminal End): Anonymous, 1929b, 1933b, 1938a, 1941b, 1951b; Allen, W. E., 1933a; Anderson, C. A., 1950; Beach Erosion Board, 1948i, 1948j, 1953a; Blake, W. P., 1856; Brown, C. B., 1942; Bucher, W. H., 1940; California Department of Public Works, 1932a; California, Universit of, 1952a; Carpenter, E. J. and Storie, R. E., 1929; Congressional Documents, 1908f, 1953b, 1954b Dapples, E. C., 1942; Darrow, W. E., 1942; Dietz, R. S. and Menard, H. W., 1951b; Eaton, J. E., 1932 Eldredge, Z. S. and Molera, E. J., 1909; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Fox, C. K., 1936; Gilbert, G. K., 191 Grant, U. S., 1944; Grunsky, C. E., 1907; Gulliver F. P., 1896; Johnson, D. W., 1910; King, R. E., 1939; Kniffen, F. B., 1929, 1931, 1932; Knox, G. L., 1937; Kuenen, Ph. H., 1947; Lawson, A. C., 1893a, 1893b, 1894, 1914, 1924, 1950; Lawson, L. M., 1950; Leeds, C. T., 1915; Livingston, A. Jr., 1939; Louderback, G. D., 1940; McKee, E. D., 1939, 1953; Means, T. H., 1928, 1931; Nelson, E. W., 1922; Nelson, N. C., 1909; O'Brien, M. P., 1936a; Orange County Planning Commission, 1941; Putnam, W. C., 1938; Revelle, R. and Shepard, F. P., 1939b; Robertson, R. R., 1942; Sanchez, P. C., 1934c; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1953c; Shaler, N. S., 1895 (tidal delta); Shepard, F. P., 1932, 1933a, 1937e, 1937g, 1938f, 1941a, 1949d, 1950d, (fan fn basin), 1950e, 1951d; Shepard, F. P. and Emery, K. O., 1941; Shuler, W. R., 1951, 1952; Smith, P. A., 1940; Smith, W. D., 1933b; Spencer, J. W., 1890; Stevenson, R. E., 1954; Sykes, G., 1926, 1937, 1938; Thompson, W. O., 1937; Trask, P. D., 1928, 1931b, 1934, 1939; Trask, P. D., and Hammar, H. E., 1931; Trowbridge, W. P., 1856b; Wanless, H. R., 1950

Density, generally refers to density of water: Allen, W. E., 1941c; Bigelow, H. B. and Leslie, M., 1930; Bullock, F. W., 1933; Dall, W. H., 1911; Dietz, R. S., 1947b; Emery, K. O., 1954d; Emery, K. O. and Rittenberg, S. C., 1952; Ewing, G. C., 1950a; Fleming, J. A., Sverdrup, H. U., Ennis, C. C., Seaton, S. L., and Hendrix, W. C., 1945; Fleming, R. H., 1942; Graham, H. W., 1934; Graham, H. W. and Moberg, E. G., 1944; Harvey, D. R., 1928; Hidaka, K., 1953; Holway, R. S., 1905; Jacobs, W. C., 1939, 1949; LaFond, E. C., 1939a; Lesser, R. M., 1951; McEwen, G. F., 1910, 1916, 1928b, 195

McKee, E. D., 1953; Menard, H. W. and Ludwick, J. C., 1951; Merrill, F. J. H., 1915; Moberg, E. G., 1928a, 1930c; Moberg, E. G. and Fleming, R. H., 1934; Munk, W. H., 1940; Munk, W. H. and Anderson, E. R., 1948; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946 (sand grains); Reid, R. O., 1948b; Revelle, R. and Shepard, F. P., 1939b; Rudnick, P. and Cochrane, J. D., 1951; Scripps Institution of Oceanography, 1949a to 1950e, 1950a to 1950e, 1950g, 1951a to 1951f, 1951h, 1951i, 1951j, 1951L, 1951m, 1952a, 1952b, 1952e, 1952f, 1952g; Shepard, F. P., 1950c; Shepard, F. P. and Emery, K. O., 1941; Sverdrup, H. U., 1934, 1937-1938, 1938a, 1939a, 1939c, 1940g, 1941a, 1941b, 1944a; Sverdrup, H. U. and Fleming, J. A., 1944; Sverdrup, H. U., Johnson, M. W. and Fleming, R. H., 1942; Sverdrup, H. U., and Staff, 1941, 1944, 1947b; Tibby, R. B., 1943; Topp, E. P., 1929; Trask, P. D., 1939; Ufford, C. W., 1947a, 1947c; U. S. Bureau of Fisheries, 1921; U. S. Coast and Geodetic Survey, 1950; U. S. Hydrographic Office, 1934b; Vaughan, T. W., 1930b, 1932a, 1932c, 1940; Wiegel, R. L., Patrick, D. A. and Kimerley, H. L., 1953 (sand grains); Young, R. T., Jr., 1939

Density Currents - see Turbidity Currents; Submarine Canyons, Origin of

Density Stratification - see Stratification, Water

Depositional Folds: Emery, K. O., 1946b

Depth Changes - see Cut and/or Fill; Submarine Canyons, Changes in

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Submarine Canyons: Cohee, G. V., 1938; Congressional Documents, 1953b; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Garrison, L. E. and Takasaki, K. L., 1950; Handin, J. W., 1949; Ludwick, J. C., Jr., 1950; MacDonald, G. A., 1934; Marlette, J. W., 1954; Shepard, F. P., 1934a, 1951a, 1951d; Shepard, F. P. and MacDonald, G. A., 1934; Shepard, F. P. and Emery, K. O., 1941

Granite and Granodiorite: Butcher, W. S., 1951a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Shepard, F. P., 1945; Galliher, E. W., 1935a, 1935c; Hanna, G. D., 1952; Holzman, J. E., 1950; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; Lawson, A. C., 1893a; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1936d, 1936f, 1936e, 1936g, 1949e, 1950e, 1951c, 1952a; Shepard, F. P. and Emery, K. O., 1941; Shumway, G. A., 1953; Trask, P. D., 1952a

Ground Water (See also: Water Table): Revelle, R., 1941; Revelle, R. and Emery, K. O., 1951

Gravel (See also: Cobble Beach): Anderson, C. A., 1941; Arnold, J. L., 1928; Blake, J., 1868b; Buck, C. D., 1928; Collins, L. B., 1931; Congressional Documents, 1880a; Crooke, R. C., Elvitsky, A. W. et al, 1953; Emery, K. O., 1941a, 1941c, 1947a; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Shepard, F. P., 1941, 1945; Emery, K. O. and Tschudy, R. H., 1941; Everest, F. A., Young, R. W. and Johnson, M. W., 1948; Fraser, C. McL., 1943; Galliher, E. W., 1933, 1935c; Goodyear, W. A., 1873; Gregory, H. E., 1915; Hanna, G. D., 1951; Harding, C. R., 1929; Hoover-Young San Francisco Bay Bridge Commission, 1930; Johnson, M. W., 1948; Johnson, M. W., Everest, F. A. and Young, R. W., 1947; Lawson, A. C., 1894; Lesser, R. M., 1951; Louderback, G. D., 1920, 1924, 1940; Menard, H. W., 1952; Menard, H. W. and Ludwick, J. C., 1951; Morrison, R. L., 1930; Packard, E. L., 1918; Revelle, R., 1950; Revelle, R. and Shepard, F. P., 1939b; Schupp, R. D., 1953; Shepard, F. P., 1941a, 1948c, 1952a; Smith, A. G. and MacKenzie, G., Jr., 1948; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnston, E. C., 1914; Trask, P. D., 1931b, 1950; Trask, P. D. and Rolston, J. W., 1950a

Abyssal: Belknap, G. E., 1874a; Emery, K. O. and Natland, M. L., 1952; Shepard, F. P., 1949d, 1950a, 1951b; Shumway, G. A., 1953

Bank and Seamount: Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Clements, T. and Dana, S. W., 1944; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942

Emery, K. O., 1947a, 1947b, 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Rittenberg, S. C., 1952; Emery, K. O. and Shepard, F. P., 1945; Garrison, L. E. and Takasaki, K. L., 1950; Hanna, G. D., 1952; Holzman, J. E., 1950; Menard, H. W., 1952; Shepard, F. P., 1938f, 1940b, 1941a, 1949e, 1951e; Shepard, F. P. and Emery, K. O., 1941, 1945; Shumway, G. A., 1953; Uchupi, E., 1954

Basin: Emery, K. O. and Shepard, F. P., 1945; Shepard, F. P., 1951b

Beach and Nearshore: Anonymous, 1938a, 1938b, 1940d, 1950e; Bascom, W. N., 1946b, 1950c; Beach Erosion Board, 1948i, 1949a, 1953a, 1954a; Blake, W. P., 1856; Chase, A. W., 1875; Congressional Documents, 1940a, 1953b; Davis, W. M., 1932; Diller, J. S., 1898, 1902; Edman, J. A., 1894, 1906; Emery, K. O., 1946b, 1954c; Emery, K. O. and Tschudy, R. H., 1941; Emmonds, S. F. and Merrill, G. P., 1894; Fraser, C. McL., 1943; Goodyear, W. A., 1873; Grant, U. S., 1943; Grant, U. S. and Shepard, F. P., 1938a; Griggs, A. B. and Wells, F. G., 1942; Gulliver, F. P., 1896; Inman, D. L., 1949, 1953a, 1953b; Irelan, W. Jr., 1890; Isaacs, J. D., 1945d; Johnson, A. G., 1935; Johnson, D. W., 1910; Lindsay, D. R., 1952; Louderback, G. D., 1940; McKee, E. D., 1953; MacDonald, G. A., 1934; Marlette, J. W., 1954; Martens, J. H. C., 1939; Mason, E. H., 1930; Mason, M. A., 1942; Merrill, F. J. H., 1917; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946 (also lag gravel on beach); Norris, R. M., 1951; O'Brien, M. P., 1939; Paguirigan, F., 1941; Pardee, J. T., 1934; Putnam, W. C., 1938; Ritter, W. E., 1901; Schupp, R. D., 1953; Shaler, N. S., 1895; Shepard, F. P., 1941a, 1950c; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P. and LaFond, E. C., 1940; Smith, A. G. and MacKenzie, G. Jr., 1948; Smith, W. S. T., 1897; Stevenson, R. E., 1954; Swinnerton, A. C., 1927; Thompson, W. O., 1937; Vaughan, T. W., 1940; Willis, B., 1900; Yale, C. G., 1913

Continental and Insular Shelves: Butcher, W. S., 1951a; Crooke, R. C., Elvitsky, A. W., et al, 1953; Davidson, G., 1897; Davis, W. M., Putnam, W. C. and Richards, G. L., Jr., 1931; Emery, K. O., 1947a, 1947c, 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Galliher, E. W., 1935a, 1935b; Gorsline, D. S., 1954; Handin, J. W., 1949; Hanna, G. D., 1952; Inman, D. L., 1950; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; MacDonald, G. A., 1934; Moore, D. G., 1951; Norris, R. M., 1951; Pardee, J. T., 1934; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1932, 1939b, 1941a, 1949b, 1949d; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937

Continental Slope: Emery, K. O., 1950c; Hanna, G. D., 1952; Shepard, F. P., 1952a

Submarine Canyons: Anonymous, 1939; Cohee, G. V., 1938; Davidson, G., 1887, 1897; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Marlette, J. W., 1954; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Shepard, F. P., 1932, 1933c, 1937b, 1938e, 1939d, 1940b, 1940d, 1940e, 1941a, 1947a, 1948b, 1949e, 1951d, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Woodford, A. O., 1951

Gravel Bars - see Bars

Gravel Beach - see Cobble Beach

Gravity: Bauer, L. A., 1911; Bowie, W., 1924b; Briggs, L. J., 1916; Daly, R. A., 1934, 1939; Eardley, A. J., 1954; Emery, K. O., 1950c; Forbush, S. E., 1934; Gutenberg, B., 1933, 1941b, 1950; Heck, N. H., 1938; Heiskanen, W., 1939; Hobbs, W. H., 1916; Jeffreys, H., 1934; Johnson, M. W., 1939b; Koczy, F. F., 1954; Lawson, A. C., 1948; McManus, A. B. and Collins, E. B., 1934; Meinesz, F. A. V., 1930, 1941, 1948; Nettleton, L. L., 1951; Pratt, W. E., 1947; Raitt, R. W., 1954; Sanchez, P. C., 1934c, 1934d; Vaughan, T. W., 1937; Wilson, G. M., 1946; Wood, H. O., 1915; Woolard, G. P., 1949, 1951

Gray Mud: Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Galliher, E. W., 1933, 1935a; Richardson, R. W., 1923

Gray Sand: Bache, A. D., 1856a; Belknap, G. E., 1874a; California Department of Public Health, 1951; Crooke, R. C., Elvitsky, A. W., et al, 1953

Graywacke: Shumway, G. A., 1953

Grazing: Emery, K. O., 1954a; Fleming, R. H., 1939a; Sverdrup, H. U. and Allen, W. E., 1939

Green Mud: Belknap, G. E., 1874a; California Department of Public Health, 1951; Crooke, R. C., Elvitsky, A. W., et al, 1953; Davidson, G., 1887, 1897; Dietz, R. S., 1952a; Dill, R. F., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1952; Emery, K. O., 1953b; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Rittenberg, S. C., 1952; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Hanna, G. D., 1952; Kuenen, Ph. H., 1946; Marlette, J. W., 1954; Michael, E. L. and McEwen, G. F., 1915; Moyer, D. A., 1929b; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Norris, R. M., 1951; Revelle, R., 1939b, 1950; Revelle, R. and Emery, K. O., 1941; Richardson, R. W., 1923; Shepard, F. P. and Emery, K. O., 1941; Sverdrup, H. U., 1938c, 1939a; Sverdrup, H. U. and Staff, 1941; Tanner, Z. L., 1892a; Udden, J. A., 1914; Vaughan, T. W., 1940; Woodford, A. O., 1951

Groins - see Engineering

Gullies especially on the Continental Slope: Benest, H., 1899; Bucher, W. H., 1940; Buffington, E. C., 1951 and 1952 (characteristics and origin); Butcher, W. S., 1951a; Dietz, R. S., 1952a, 1954; Kuenen, Ph. H., 1947; McEwen, G. F. and Staff, 1948; Menard, H. W. and Ludwick, J. C., 1951; Norris, R. M., 1951; Thompson, W. C., 1949; Thompson, W. F. and Thompson, J. B., 1919; Toit, A. L. du, 1940; Shepard, F. P., 1937b, 1941c (origin), 1943a, 1948d, 1952a

Gypsum: Emery, K. O., 1950d

Halogens (See also: Bromine, Chlorinity, Floride, Iodine): Bullock, F. W., 1933; Sverdrup, H. U., 1939a

Hanging Valleys, Rocky Coasts: Smith, W. D., 1933c

Harbor: Anonymous, 1906a, 1925b, 1938a, 1938b, 1940d, 1952f; Allen, W. B., 1932; Bascom, W. N., 1950b; Beach Erosion Board, 1942a, 1948a, 1948c, 1948e, 1948f, 1948g, 1948h, 1948i, 1948j, 1949a, 1951, 1952a, 1954a, 1954c; Blinn, F. S., 1928; Broshous, C. R., 1938; Bruff, S. C., 1946; Bullock, F. W., 1933; Caldwell, J. M., 1950; California Department of Public Health, 1951; California, University of, 1952a, 1954a, 1954b; Chace, B. W., 1953; Colden, C. J., 1926; Congressional Documents, 1880b, 1880c, 1897, 1908a, 1908e, 1908g, 1908h, 1909, 1910, 1926, 1934b, 1938a, 1938b, 1938c, 1938d, 1940a, 1940b, 1940c, 1940d, 1940e, 1940f, 1941, 1942a, 1942b, 1942c, 1943, 1949a, 1949b, 1949c, 1949d, 1949e, 1949f, 1949-1950a, 1949-1950b, 1953a; Darrow, W. E., 1942; Davidson, G., 1884; Dunham, J. W., 1951; Eaton, R. O., 1951; Ewing, G. C., 1950c; Fries, A. A., 1912; Gillette, C. E., 1905; Gilluly, J. and Grant, U. S., 1947; Grant, U. S., 1938; Handin, J. W., 1949; Harts, W. W., 1901, 1911; Harvey, D. R., 1928; Hawgood, H., 1914; Hickson, R. E. and Rodolf, F. W., 1951; Hoover, J. W., 1932a; Horton, D. F., 1948; Hough, J. L., 1942; Hudson, R. Y. and Moore, L. F., 1951; Hughes, R. T., 1947; Isaacs, J. D., 1948; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, A. G., 1940, 1951; Johnson, J. W., 1948a, 1948d; Kaplan, K. and Pape, H. E., Jr., 1951; Kelton, E. C., 1940; Kenyon, E. C., Jr., 1951; Knapp, R. T. and Vanoni, V. A., 1945; Lapsley, W. W., 1937; Lawton, C. H., 1936; Leeds, C. T., 1915, 1936; Livingston, A., Jr., 1939; Los Angeles County

Regional Planning Commission, 1938; Los Angeles Regional Water Pollution Control Board, 1952; Marlette, J. W., 1954; Mason, M. A., 1949b; McAfee, C. M., Jr., 1939; McArthur, W. P., 1850; McEwen, G. F., 1935b; McGowan, W. C., 1916; McKee, E. D., 1953; McOuat, H. W., 1951; Nelson, J. W., Zinn, C. J., Strahorn, A. T., Watson, E. B. and Dunn, J. E., 1919; Nicholson, G. F., 1929; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1939; Peel, K. P., 1951; Pentegoff, V. P., 1947; Postel, A. C., 1939; Purcell, G., 1914; Sears, C. B., 1876; Shepard, F. P., 1949b, 1950c; Shepard, F. P. and Inman, D. L., 1951b; Smith, W. D., 1933a; Somers, P., 1952; Streblow, A. G., 1951; Studds, R. F. A., 1950; Symons, T. W., 1893; Tilden, C. A., 1925; Tower, M. L., 1910; Trask, P. D., 1931, 1952a; Trask, P. D. and Scott, T., 1954; U. S. Board Appointed to Locate a Deep-Water Harbor at Port Los Angeles or at San Pedro, California, 1897; U. S. Coast and Geodetic Survey, 1913; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1947a, 1947b, 1949, 1950; Vanoni, V. A. and Carr, J. H., 1951; Verrill, G. E., 1930; Wharton, M., 1929; Whiting, W. D. and Others, 1858; Whittemore, G. F., 1916, 1917, 1926; Williamson, R. S. and Heuer, W. H., 1871; ZoBell, C. E., 1941

Headlands, Rocky Headlands, Promitories: Anonymous, 1938a, 1940d; Arnold, R., 1900; Barrows, A. L., 1913; Bascom, W. N., 1950b; Beach Erosion Board, 1942a, 1948a, 1948h, 1948i, 1949a, 1953c, 1954a; Blake, W. P., 1856; Brown, E. I., 1939; Bruff, S. C., 1946; California, University of, 1954a; Chase, A. W., 1875; Congressional Documents, 1938a, 1938c, 1940a, 1949b, 1949f, 1953b; Davidson, G., 1864, 1875a; Davis, W. M., 1932; Davis, W. M., Putnam, W. C. and Richards, G. L., Jr., 1931; Dietz, R. S., 1947b; Diller, J. S., 1896; Drury, N. B., 1938; Dunham, J. W., 1951; Dunkle, M. B., 1944, 1950; Eaton, R. O., 1951; Emmonds, S. F. and Merrill, G. P., 1894; Fewkes, J. W., 1889; Friedman, S. L., 1949; Goldberg, J., 1940; Gulliver, F. P., 1896; Handin, J. W., 1949, 1951; Hannum, G. W. T., 1947; Harts, W. W., 1911; Hawgood, H., 1914; Hinds, N. E. A., 1952; Hoover, J. W., 1932a; Inman, D. L., 1940, 1953a, 1953b; Ives, R. L., 1951; Krumbein, W. C., 1947; Krumbein, W. C. and Ohsiek, L. E., 1950; Kuenen, Ph. H., 1937; Lawson, A. C., 1924; Leeds, C. T., 1936; Leypoldt, H., 1941a, 1941b; Livingston, A. Jr., 1939; Louderback, G. D., 1940; MacDonald, G. A., 1934; Masters, P., 1840; Munk, W. H. and Traylor, M. A., 1947; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951, 1952; O'Brien, M. P., 1936a; O'Brien, M. P. and Johnson, J. W., 1947; Page, G. B., 1950; Pardee, J. T., 1934; Peel, K. P., 1951; Price, F., 1936; Putnam, J. A. and Arthur, R. S., 1948; Putnam, W. C., 1938; Scripps Institution of Oceanography, 1954b; Schupp, R. D., 1953; Shalowitz, A. L., 1951; Shepard, F. P., 1950c, 1950g, 1952a; Shepard, F. P. and Emery, K. O., and LaFond, E. C., 1941; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P. and LaFond, E. C., 1942; Smith, W. D., 1933b, 1933c; Snavely, P. D., Jr., 1951; Stevenson, R. E., 1954; Symons, T. W., 1893; Thompson, W. O., 1937; Tower, M. L., 1910; Trask, P. D., 1952a, 1952b; Twenhofel, W. H., 1943; Willis, B., 1900; Wilson, M. E., 1907

Heating: Jacobs, W. C., 1942 and 1943 (heat exchange), 1949; LaFond, E. C., 1939a, 1940; McEwen, G. F., 1950; Sverdrup, H. U., 1937-1938, 1938a, 1939c, 1940g (heat budget)

Heavy Minerals:

Abyssal: Koczy, F. F., 1954

Bank: Butcher, W. S., 1951a; Dana, S. W., 1942; Emery, K. O., 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Holzman, J. E., 1950; Uchupi, E., 1954

Basin: Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Rittenberg, S. C., 1952; Ludwick, J. W., Jr., 1950

Beach and Nearshore: Anonymous, 1950a, 1951d, 1954j; Averill, C. V. and Others, 1946; Boos, M. F., 1940; Bullard, F. M. and Mills, R. A., 1951; Congressional Documents, 1953b; Edman, J. A., 1894; Griggs, A. B. and Wells, F. G., 1942; Handin, J. W., 1949, 1951; Hundhausen, R. J., 1947; Inman, D. L., 1950, 1953b; Lakes, A., 1899; Marlette, J. W., 1954; Martens, J. H. C., 1939; Scripps Institution of Oceanography, 1952i, 1953c; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Sinnott, A., 1941; Thompson, W. O., 1937; Trask, P. D., 1924, 1952b; Twenhofel, W. H., 1943; Yale, C. G., 1913

Coastal Sand Dunes: Handin, J. W., 1949; Merriam, P. D., 1949

Continental Shelf: Anonymous, 1950b, 1954j; Butcher, W. S., 1951a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Gorsline, D. S., 1954; Inman, D. L., 1950; Marlette, J. W., 1954; Shepard, F. P. and Wrath, W. F., 1937

Submarine Canyons: Cohee, G. V., 1938; Crowell, J. C., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Marlette, J. W., 1954

Helium: Piggot, C. S. and Urry, W. D., 1942; Sisler, F. D. and ZoBell, C. E., 1951b

Holdfasts: Andrews, H. L., 1945; Couch, E. B., 1915; Crowell, J. C., 1952; Emery, K. O. and Tschudy, R. H., 1941; Ritter, W. E., 1902; Shumway, G. A., 1953; Trask, P. D., 1939

Hooks - see Cuspate Forelands

Horst (See also: Submarine Topography): Koczy, F. F., 1954

Hydration - see Temperature of Hydration and Dehydration

Hydrogen: Fox, D. L. and Anderson, L. J., 1941; Galliher, E. W., 1933; Rosenfeld, W. D., 1948; Sisler, F. D. and ZoBell, C. E., 1950, 1951a, 1951b; Trask, P. D., 1939; ZoBell, C. E., 1939, 1942b, 1944, 1946b, 1946-1947, 1947b, 1947c, 1947d, 1949, 1950

Hydrogen Ion Concentration - see pH

Hydrogen Sulfide (See also: Gases, Hydrogen, Iron, Iron Sulfides, Pyrite, Sulfur): Brongersma-Sanders, M., 1948; California Department of Fish and Game, 1951; California Department of Public Health, 1951; Cohee, G. V., 1938; Dapples, E. C., 1942; Dill, R. F., 1952; Emery, K. O., 1946b; Emery, K. O. and Rittenberg, S. C., 1952; Ford, J. L. C., 1942; Fox, D. L., 1950; Fox, D. L. and Anderson, L. J., 1941; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Galliher, E. W., 1933, 1935a, 1935c; Hoots, H. W., 1943; Horonjeff, R. and Patrick, D. A., 1952; Inman, D. L., 1950; Krumbein, W. C., 1942; Louderback, G. D., 1940; McKee, E. D., 1953; Marlette, J. W., 1954; Miller, R. C., Ramage, W. D. and Lazier, E. L., 1928; Moore, D. G., 1951; Moulton, G. F., 1928; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Revelle, R., 1939b, 1941, 1950; Rittenberg, S. C., 1940; San Diego Regional Water Pollution Control Board, 1952; Shepard, F. P., 1951a; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Sisler, F. D. and ZoBell, C. E., 1950, 1951a, 1951b; Stevenson, R. E., 1954; Stevenson, R. E. and Emery, K. O., 1951; Sverdrup, H. U., 1939a, 1940d; Sverdrup, H. U. and Staff, 1941; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Trask, P. D. and Scott, T., 1954; Vaughan, T. W., 1940; Wright, R., 1937; ZoBell, C. E., 1938, 1939, 1942a, 1942b, 1946, 1946-1947, 1947b, 1947c, 1947d, 1950; ZoBell, C. E. and Feltham, C. B., 1942

Hydrotroilite - see Iron Sulfides

Hydroxides - see Iron Oxides

Igneous Rocks (See also: Rock and various rock types): Butcher, W. S., 1951a; Clements, T. and Dana, S. W., 1944; Davis, W. M., Putnam, W. C. and Richards, G. L., Jr., 1931; Emery, K. O., 1941a, 1946b, 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Shepard, F. P., 1941, 1945; Gorsline, D. S., 1954; Holzman, J. E., 1950; Kew, W. S. W., 1928; Moore, D. G., 1951; Norris, R. M., 1951; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Wrath, W. F., 1937; Shumway, G. A., 1953;

Uchupi, E., 1954
Ignition Loss: Trask, P. D., 1927b; Putnam, J. A., Bermel, K. J. and Johnson, J. W., 1947
Imbrecation: Emery, K. O. and Stevenson, R. E., 1950
Insoluble Residue (See also: Heavy Minerals): Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1946b, 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Rittenberg, S. C., 1952; Gorsline, D. S., 1954; Holzman, J. E., 1950; Shepard, F. P., 1949b
Insolution: Fleming, R. H. and Revelle, R., 1939
Interflow i.e. turbidity currents (See also: Bottom Flow, Turbidity Currents): Menard, H. W. and Ludwick, J. C., 1951
Instrumentation: Bascom, W. N., 1948a; Beach Erosion Board, 1952b; California, University of, 1954a; Colbert, L. O., 1939; Fox, L. S., 1930 (diving); O'Brien, M. P. and Johnson, J. W., 1947; Scripps Institution of Oceanography, 1952h; Sverdrup, H. U., 1938c, 1939a; U. S. Bureau of Fisheries, 1921
Biological Instrumentation: Allen, W. E., 1928d, 1930a, 1940a, 1940d; Bullock, F. M., 1933; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography, U. S. Fish and Wildlife Service, 1950; Coe, W. R. and Allen, W. E., 1937; Rittenberg, S. C., 1940; ZoBell, C. E., 1947d; ZoBell, C. E. and Feltham, C. B., 1934b, 1942
Marine Geological Instrumentation: Anonymous, 1939; Armstrong, T. A., 1954; Atwill, E. R., 1942; Bascom, W. N., 1950a; Beach Erosion Board, 1944b, 1949c; California, University of, 1945; Dietz, R. S., 1954; Emery, K. O. and Dietz, R. S., 1939, 1941; Emery, K. O. and Gould, H. R., 1948; Emery, K. O. and Shepard, F. P., 1945; Fisher, R. L., and Mills, R., 1952; Folsom, R. G., 1944; Fox, L. S., 1930; Hanna, G. D., 1952; Isaacs, J. D., 1945a, 1945f; LaFond, E. C., 1939b; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shumway, G., Silverman, M. and Stewart, H. B., 1954; Raitt, R. W., 1954; Revelle, R. and Shepard, F. P., 1939b; Rittenberg, S. C., 1940; Scripps Institution of Oceanography, 1952i; Shepard, F. P., 1938b, 1940e, 1947a, 1948d, 1949b; Shepard, F. P. and Emery, K. O., 1945; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Trask, P. D., 1927a; Varney, F. M. and Redwine, L. E., 1937; Warner, S. E., 1946a, 1946b, 1947; Watts, G. M. and Others, 1953; Wilson, G. M., 1946
Oceanographic Instrumentation: Bascom, W. N., 1947b, 1947e, 1948b; Beach Erosion Board, 1949b, 1949c; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography, U. S. Fish and Wildlife Service, 1950; California, University of, 1945; Chinn, A. J., 1949; Dyk, K. and Swainson, O. W., 1953; Everest, F. A., Young, R. W., and Johnson, M. W., 1948; Folson, R. G., 1944c, 1945a, 1945b, 1945c, 1948a, 1948b, 1949; Forrest, D. R., 1950; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Gerhardt, J. R. and Jehn, K. H., 1954; Goldberg, E. D., Baker, M. and Fox, D. L., 1952; Gorgy, S., Rakestraw, H. W. and Fox, D. L., 1948 (chemical); Hughes, R. T., 1946; Inman, D. L. and Quinn, W. H., 1952; Isaacs, J. D. and Wiegel, R. L., 1950; Iversen, H. W., 1945; Johnson, J. W., 1948b, 1948c; Knapp, R. T., 1952; Lesser, R. M., 1951; O'Brien, M. P. and Johnson, J. W., 1947; Revelle, R. and Shepard, F. P., 1943; Scanlon, T. S., Jr. and Osborn, P., 1950; Schneider, W. A., 1954; Scripps Institution of Oceanography, 1950g, 1951g, 1953b; 1953c, 1953g; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P. and LaFond, E. C., 1940; Snodgrass, F. E., 1951, 1952, 1954; Sverdrup, H. U., 1940d; Sverdrup, H. U. and Staff, 1943a; Thompson, T. G. and Robinson, R. J., 1932 (chemical); Tibby, R. B., 1937a; Wiegel, R. L., 1948; U. S. Commission of Fish and Fisheries, 1898; Young, R. T., Jr., 1939, 1943; Young, R. T., Jr. and Gordon, R. D., 1939
Insular Shelf (See also: Continental Shelf): Beach Erosion Board, 1948h; Butcher, W. S., 1951a; Dana, S. W., 1942; Emery, K. O. 1947c; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shumway, G., Silverman, M. and Stewart, H. B., 1954; Miller, J. C., 1953; Norris, R. M., 1951; Shepard, F. P., 1932, 1941a; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P., Grant, U. S. and Dietz, R. S., 1939; Shepard, F. P. and Wrath, W. F., 1937; Smith, W. S. T., 1897; Stock, C., 1935; Uchupi, E., 1954; Wrath, W. F., 1938
Internal Waves: California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography, U. S. Fish and Wildlife Service, 1950; Crowell, J. C., 1947; Defant, A., 1950a, 1950b; Dietz, R. S. and Menard, H. W., 1951b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Ewing, G. C., 1950a, 1950b; Fleming, R. H., 1937-1938; Gilbert, J. Y. and Allen, W. E., 1943; LaFond, E. C., 1949; Leipper, D. F., 1950; Menard, H. W., 1952; Menard, H. W. and Ludwick, J. C., 1951; Munk, W. H., 1940, 1941; Revelle, R., 1939b, 1950; Rudnick, P. and Cochrane, J. D., 1951; Scripps Institution of Oceanography, 1950g; Shepard, F. P., 1941a, 1949d; Shepard, F. P. and Emery, K. O., 1941; Skogsberg, T., 1936; Sverdrup, H. U., 1939c, 1940f; Ufford, C. W., 1947a, 1947b, 1947c
Interstitial Sedimentation (See also: Sedimentation): Galliher, E. W., 1935c
Interstitial Water and Water Content of Sediments: Crooke, R. C., Elvitsky, A. W., et al, 1953; Emery, K. O. and Dietz, R. S., 1941; Krumbein, W. C., 1942; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Sverdrup, H. U., 1939a; Sverdrup, H. U. and Staff, 1941; Trask, P. D., 1927a, 1927b, 1932a, 1939; Trask, P. D. and Wu, C. C., 1930b; ZoBell, C. E., 1938, 1942a, 1942b
Abyssal: Dill, R. F., 1952; Revelle, R., 1937a, 1937b; Scripps Institution of Oceanography, 1953e
Basin: Emery, K. O., 1950e; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Revelle, R., 1950 (Gulf of California); Rittenberg, S. C., 1940 (Gulf of California); Smith, P. V., Jr., 1954; Trask, P. D., 1931a, 1931b
Bays, Estuaries, Lagoon, Mud Flat, Salt Marsh: Coxe, L. C., 1949; Emery, K. O., 1950d; Hinde, H. P., 1952; Petracek, F. J., Fox, D. L. and Zechmeister, C., 1951; Stevenson, R. E., 1954; Stevenson, R. E., and Emery, K. O., 1951; Trask, P. D. and Rolston, J. W., 1950b
Beach and Nearshore: Emery, K. O., 1945a; Emery, K. O. and Foster, J. F., 1948; Emery, K. O. and Gale, J. F., 1951; Emery, K. O. and Stevenson, R. E., 1950; Grant, U. S., 1946; Krumbein, W. C., 1950; Palmer, R. H., 1928; Stump, R. S. and Bascom, W. N., 1947
Coastal Sand Dunes: Olsson-Seffer, P., 1908, 1910a; Purer, E. A., 1936
Continental Shelf: Dill, R. F., 1952; Fox, D. L., 1937; Revelle, R. and Emery, K. O., 1951
Iodine (See also: Halogens): Evans, R. D., Kipp, A. F. and Moberg, E. G., 1938; McEwen, G. F., 1934a; Sverdrup, H. U., 1939a; Sverdrup, H. U. and Staff, 1941; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Vaughan, T. W., 1940
Ionium - see Radioactivity
Iron (See also: Beach Placers, Black Sands, Heavy Minerals, Iron Oxides and Hydroxides, Iron Sulfides, Limonite, Magnetic Minerals, Mineralogy, Pyrite, Sulfur): Anonymous, 1954m; Ahlstrom, E. H., 1950; Brongersma-Sanders, M., 1948; Cartwright, L. D. Jr., 1928; Dapples, E. C., 1942; Dill, R. F., 1952; Emery, K. O., 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Fleming, R. H., 1938a; Galliher, E. W., 1933, 1935a, 1935c, 1937; Goldberg, E. D., 1952, 1954; Goldberg, E. D., Walker, T. J. and Whisenand, A., 1952; Inman, D. L., 1950; Koe, K. B., Fox, D. L. and Zechmeister, L., 1950; Krumbein, W. C., 1942; Lipman, C. B., 1929; McEwen, G. F., 1934a; Messner, W. E., 1954; Moulton, G. F., 1928;

Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Piggot, C. S., 1932, 1944; Revelle, R., 1935, 1937a, 1937b, 1950; Revelle, R. and Emery, K. O., 1951; Rotschi, H., 1951; Scripps Institution of Oceanography, 1953e; Sisler, F. D. and ZoBell, C. E., 1951a; Stanton, T. E., Jr., 1938; Stevenson, R. E., 1954; Sverdrup, H. U., 1940d, 1940e; Sverdrup, H. U. and Staff, 1941; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Updegraff, D. M., 1948; Vaughan, T. W., 1935a; Wright, R., 1937; ZoBell, C. E., 1935, 1936, 1939, 1941, 1942a, 1942b, 1943, 1946b, 1947b, 1947c, 1947d, 1950; ZoBell, C. E. and Anderson, D. Q., 1936 (deposition of iron)

Iron Oxides and Hydroxides (See also: Iron, Limonite): Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Galliher, E. W., 1933, 1935c; Goldberg, E. D., 1954; Scripps Institution of Oceanography, 1953e; Stanton, T. E., Jr., 1938; Stevenson, R. E., 1954; Vaughan, T. W., 1935a; Wright, R., 1937

Iron Sulfides including Melnikovite, Hydrotroilite (See also: Pyrite, Sulfur): Emery, K. O. and Rittenberg, S. C., 1952; Galliher, E. W., 1933, 1935c; Louderback, G. D., 1940; McKee, E. D., 1953; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Revelle, R., 1950; Sisler, F. D., 1949; Sisler, R. D. and ZoBell, C. E., 1950, 1951; Stevenson, R. E., 1954; Stevenson, R. E. and Emery, K. O., 1951; Sverdrup, H. U., 1940d; Sverdrup, H. U. and Staff, 1941; Thompson, T. G., and Robinson, R. J., 1932; Trask, P. D., 1939; Vaughan, T. W., 1935a; Wright, R., 1937; ZoBell, C. E., 1935, 1939, 1942a, 1947b, 1947c, 1947d, 1950

Isostasy: Daly, R. A., 1934, 1939; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Hodge, E. T., 1934; Lawson, A. C., 1924, 1939, 1948; Menard, H. W. and Dietz, R. S., 1951; Woolard, G. P., 1951

Jetties - see Engineering

Joints (on Rocky Coasts) - see Minor Features, Rocky Coasts

Jurassic: Emery, K. O., 1941a, 1948; Emery, K. O. and Shepard, F. P., 1941, 1945; Holzman, J. E., 1950; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937

Lagoon (See also: Bay, Embayment, Estuary, Harbor, Marsh, Reefs, Salt Marsh, Swamp, Tide Flat): Anonymous, 1940d; Alden, J., 1852; Anderson, C. A., 1950; Arnold, J. L., 1928; Atwill, E. R., 1942; Bache, A. D., 1862; Bascom, W. N., 1946b; Beach Erosion Board, 1948h; Blake, W. P., 1856; Bruff, S. C., 1946; Clark, A., 1933; Clark, W. O., 1915; Congressional Documents, 1940a; Daly, R. A., 1934; Dapples, E. C., 1942; Davidson, G., 1856, 1897; Dawson, E. Y., 1952; Diller, J. S., 1903; Emery, K. O., 1950d; Fraser, C. McL., 1943; Gislén, T., 1943; Goldberg, J., 1940; Gorsline, D. S., 1954; Grant, U. S. and Sheppard, W. E., 1934; Handin, J. W., 1949; Handin, J. W. and Ludwick, J. C., 1949; Hertlein, L. G. and Emerson, W. K., 1953; Howard, A. D., 1951; Inman, D. L., 1949, 1950, 1953b; Ives, R. L., 1951; Johnson, J. W., 1949a; Kenyon, E. C., Jr., 1951; Lawson, A. C., 1893a, 1894, 1914; Lee, C. H., 1941; Leeds, C. T., 1915; Leypoldt, H., 1941b; Livingston, A., Jr., 1939; MacDonald, G. A., 1934; McKee, E. D., 1953; McOuat, H. W., 1951; Merrill, F. J. H., 1917; Michael, E. L., 1921; Miller, H. E. and Nausbaum, I., 1952; Morrison, R. L., 1930; Natland, M. L., 1933a; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Nelson, E. W., 1922; Nelson, J. W., Zinn, C. J., Stahorn, A. T., Watson, E. B. and Dunn, J. E., 1919; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951, 1952; Page, G. B., 1950; Pardee, J. T., 1934; Patrick, D. A., 1950; Pease, W. H., 1868; Rankin, W. D., 1931; Revelle, R., 1950; Rothwell, W. T., Jr., 1946; Sanchez, P. C., 1934c; Scripps Institution of Oceanography, 1953c; Shepard, F. P., 1932, 1950c, 1952b; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Shuler, W. R., 1951; Smith, W. D., 1933c; Somers, P., 1952; Soper, E. K., 1938; Stevenson, R. E., 1954; Storie, R. E. and Carpenter, E. J., 1929; Trask, P. D., 1939, 1952a; Trowbridge, W. P., 1856b; Vaughan, T. W., 1940; Veach, J. A., 1859; Weaver, C. E., 1949; ZoBell, C. E., 1939; ZoBell, C. E. and Feltham, C. B., 1942

Lamination, Stratification (See also: Graded Bedding, Sand Layers): Atwill, E. R., 1942; Butcher, W. S., 1951a; Cohee, G. V., 1938; Dapples, E. C., 1942; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Emery, K. O., 1945a, 1950d; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Natland, M. L., 1952; Emery, K. O. and Rittenberg, S. C., 1952; Emery, K. O. and Stevenson, R. E., 1950; Ford, J. L. C., 1942; Fox, L. S., 1930; Galliher, E. W., 1935a, 1935c; Garrison, L. E. and Takasaki, K. L., 1950; Inman, D. L., 1949, 1953b; Kuenen, Ph. H. and Menard, H. W., 1952; Lang, H., 1916; Louderback, G. D., 1920, 1940; McKee, E. D., 1939, 1953; MacDonald, G. A., 1934; Martens, J. H. C., 1939; Moore, D. G., 1951; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Olsson-Seffer, P., 1908; Page, G. B., 1950; Palmer, R. H., 1928; Phlege F. B., 1951; Piggot, C. S., 1944; Reed, R. D., 1930b; Revelle, R., 1939, 1950; Scripps Institution of Ocean graphy, 1953e; Shepard, F. P., 1941a, 1949b, 1951d; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Shepard, F. P. and MacDonald, G. A., 1938; Sinnott, A 1941; Sverdrup, H. U., 1939a; Sverdrup, H. U. and Staff, 1941; Thompson, W. O., 1933, 1937; Trask, P. D., 1931b; Trask, P. D. and Scott, T., 1954; Woodford, A. O., 1951; ZoBell, C. E., 1938, 1942b, 1944, 1946b; ZoBell, C. E. and Anderson, D. Q., 1936

Land Bridges, i.e., former land bridges connecting the Channel Islands to the mainland: Bruff, S. C., 1946; Cockerell, T. D. A., 1938b; Chaney, R. W. and Mason, H. L., 1934; Dunkle, M. B., 1950; Emiliani, C. and Epstein, S., 1953; Goodyear, W. A., 1890; Landes, K. K., 1952a; Norris, R. M., 1951; Shepard, F. P., 1948c, 1949e; Stock, C., 1936; Stock, C. and Furlong, E. L., 1928

Landslides - see Submarine Slumping; Submarine Canyons, origin of

Lead: Piggot, C. S. and Urry, W. D., 1942; Revelle, R. and Emery, K. O., 1951; Trask, P. D., 1939

Legal, beaches unless otherwise noted. (See also: Tidelands): Anonymous, 1933c, 1941b, 1944a; Alexander, A. H., 1936; Barnes, A. J., 1937; Beach Erosion Board, 1939, 1948i, 1954a, 1954c; Bingham, J. W., 1938 (fisheries); Blodget, R. M., 1949 (tidelands); California Legislature, 1874 (marsh lands); Congressional Documents, 1881, 1949f, 1949-1950b, 1953; Fitzgerald, J. N. J., 1952 (tidelands); Friedman, S. L., 1949; Griffin, D. F., 1944; Hannum, G. W. T., 1947; Hjelte, G., 1938; Johnson, A. G., 1935, 1951; Kingman, J. J., 1936; Lamport, H. B., 1937; Larson, G. P., 1939, 1941, 1942a, 1943, 1946; Leeds, C. T., 1915, 1936; Los Angeles County Regional Planing Commission, 1940; McOuat, H. W., 1951; Morgan, F. A., 1930; Mouton, M. W., 1952 (international law of tidelands, fisheries etc.); Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1939; Orange County Planning Commission, 1940; Patton, R. S., 1941; Pollak, C. N., 1953 (tidelands) Porter, J. S., 1936; Price, F., 1936; Pyles, E. E., 1954 (tidelands); Shalowitz, A. L., 1953 (tidelands); Shaw, P. A. and Towers, C. L., 1937; Shuler, W. R., 1952; Smith, J. S., 1936, 1937; Stockman, L. P., 1932 (tidelands); Woodson, J. B., 1941

Lenses: Anonymous, 1951d; Butcher, W. S., 1951a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1950d; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Natland, M. L., 1952 Griggs, A. B. and Wells, F. G., 1942; Hall, J. V., Jr., 1952; Shepard, F. P., 1951b; Stevenson, R. E., 1954; Thompson, W. C., 1949; Thompson, W. O., 1937; Trask, P. D., 1924

Levees, Natural: Buffington, E. C., 1951, 1952; Dietz, R. S., 1952a, 1953 (leeved banks); Dill, R. F., Dietz, R. S. and Stewart, H., 1952, 1954; Landes, K. K.,

1952a; Menard, H. W. and Ludwick, J. C., 1951; Shepard, F. P., 1950d, 1951c, 1953; Stevenson, R. E., 1954

Light (See also: Absorption, Extinction Coefficient, Light Reflection off Sea Water, Transparency, Turbid Water): Allen, W. E., 1920, 1927a, 1928c, 1930a, 1940b, 1940d, 1941a, 1941c, 1946a; Andrews, H. L., 1945; Bongersma-Sanders, M., 1948; Bullock, F. W., 1933; Burt, W., 1952; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California, and U. S. Fish and Wildlife Service, 1950, 1951a; Coe, W. R., 1948; Connell, C. H. and Cross, J. B., 1950; Couch, E. B., 1915; Emery, K. O. and Tschudy, R. H., 1941; Esterly, C. O., 1911; Ewing, G. C., 1950a; Fleming, R. H., 1939a; Fox, D. L. and Anderson, L. J., 1941; Gislén, T., 1944; Hewatt, W. G., 1937; Johnson, M. W., 1939b, 1948; Kindle, E. M., 1934; MacGinitie, G. E., 1927, 1937; Miller, R. C., Ramage, W. D. and Lazier, E. L., 1928; Moberg, E. G., 1925, 1928a, 1930c; Morrison, R. L., 1930; Myers, E. H., 1942, 1943; P'ei, C., 1929; Purer, E. A., 1936, 1942; Richardson, B., 1932a, 1934; Scripps Institution of Oceanography, 1952i; Sverdrup, H. U., 1940e, 1940g; Tilden, C. A., 1925; Topp, E. P., 1929; Trask, P. D., 1939; Vaughan, T. W., 1930b, 1930d, 1932a, 1932b, 1932c, 1934, 1940; Young, R. T., Jr., 1939 (including scattering of light); Young, R. T. and Gordon, R. D., 1939; ZoBell, C. E., 1942a, 1942b, 1947c

Light Reflection off Sea Water: Ewing, G. C., 1950a

Limestone (See also: Carbonates, Coquina, Marl, Rock, Sedimentary Rock, Shells): Anderson, C. A., 1941; Butcher, W. S., 1951a; Cohee, G. V., 1938; Dapples, G. C., 1942; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a, 1941b, 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Gee, H., 1932; Hinds, N. E. A., 1952; Holzman, J. E., 1950; Inman, D. L., 1950; Landes, K. K., 1952a; MacDonald, G. A., 1934; Moore, D. G., 1951; Nelson, R. N. and Schenck, H. G., 1928; Shepard, F. P., 1936f, 1949b, 1953; Shepard, F. P. and Emery, K. O., 1945; Shepard, F. P. and Grant, U. S., 1947; Shumway, G. A., 1953; Trask, P. D., 1932b; Uchupi, E., 1954; ZoBell, C. E., 1947b, 1947d

Limonite (See also: Iron, Iron Oxides and Hydroxides): Butcher, W. S., 1951a; Cohee, G. V., 1938; Dapples, E. C., 1942; Dill, R. F., 1952; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Galliher, E. W., 1933; Holzman, J. E., 1950; Revelle, R. and Shepard, F. P., 1939b

Lithification - see Consolidation

Lithium: McEwen, G. F., 1934a; Revelle, R. and Emery, K. O., 1951; Thompson, T. G. and Robinson, R. J., 1932; Vaughan, T. W., 1933

Littoral Currents - see Longshore and Littoral Currents

Littoral Drift, Beach Drift, Longshore Drift (See also: Concentration of Sediment in the Surf Zone, Creep, Suspended Sediment, Traction, Transport of Sediment): Anonymous, 1916a, 1917, 1938a, 1940d, 1941b; Beach Erosion Board, 1942a, 1948a, 1948h, 1948i, 1948j, 1949a, 1950b, 1951, 1952a, 1953a, 1953c, 1954a; Blinn, F. S., 1928; Brown, E. I., 1939; California, University of, 1952a, 1952b; Congressional Documents, 1938a, 1940a, 1941, 1942b, 1942c, 1949f, 1949-1950b, 1953b; Crowell, J. C., 1952; Dunham, J. W., 1951; Eaton, R. O., 1951; Fisher, R. L. and Mills, R., 1952; Gee, H. C., 1938; Gilbert, G. K., 1917; Goldberg, J., 1940; Grant, U. S., 1938, 1940; Grant, U. S. and Shepard, F. P., 1938b, 1940; Griffin, D. F., 1944; Gulliver, F. P., 1896; Hall, J. V., Jr., 1952; Hall, W. C., 1938, 1942; Handin, J. W., 1949, 1951; Handin, J. W. and Ludwick, J. C., 1949; Hannum, G. W. T., 1947; Harts, W. W., 1911; Hawgood, H., 1914; Horton, D. F., 1948; Hunter, R. C., 1946; Inman, D. L., 1949, 1953a, 1953b; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, A. G., 1935, 1940c; Johnson, J. W., 1947b, 1948b, 1952; Krumbein, W. C., 1950; Krumbein, W. C. and Ohsiek, L. E., 1950; Lapsley, W. W., 1937; Larsen, G. P., 1942b; Leeds, C. T., 1916, 1936; Leeds, C. T., Vanoni, V. A. and Knapp, R. T., 1934; Livingston, A., Jr., 1939; Los Angeles County Regional Planning Commission, 1940; McAfee, C. M., Jr., 1939; Marlette, J. W., 1954; Martens, J. H. C., 1939; Mason, M. A., 1942, 1949c, 1950a, 1950b; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951, 1952; O'Brien, M. P., 1931, 1936a, 1939, 1947b; O'Brien, M. P. and Johnson, J. W., 1947; Orange County Planning Commission, 1941; Page, G. B., 1950; Peel, K. P., 1951; Place, J. L., 1952; Postel, A. C., 1937, 1939; Rolland, M. C., 1952; Saville, T., Jr. and Caldwell, J. M., 1953; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1952i; Sears, C. B., 1876; Shepard, F. P., 1935d, 1947b, 1950f, 1951a; Shepard, F. P. and Inman, D. L., 1951b; Shuler, W. R., 1951, 1952; Somers, P., 1952; Stelzenmuller, W. B., 1949; Tower, M. L., 1910; Trask, P. D., 1952a, 1952b; Trask, P. D. and Scott, T., 1954; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1935, 1936; Ward, H. A., 1952; Watts, G. M. and Others, 1953; Wiegel, R. L. and Kimberley, H. L., 1950; Williams, E. A. and Isaacs, J. D., 1952; Yale, C. G., 1879

Littoral Drift: Rate: Handin, J. W., 1949; Los Angeles County Regional Planning Commission, 1940; Marlette, J. W., 1954; O'Brien, M. P., 1936a; Orange County Planning Commission, 1941; Trask, P. D., and Scott, T., 1954

Longshore Bars - see Bars

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Miocene (See also: Tertiary): Butcher, W. S., 1951a; California, University of, 1953a, 1953b; Carsola, A. J. and Dietz, R. S., 1952; Cohee, G. V., 1938; Corey, W. H., 1951, 1952; Crouch, R. W., 1954; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a, 1946b, 1947b, 1948, 1950b, 1951, 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Shepard, F. P., 1941, 1945; Emery, K. O. and Tschudy, R. H., 1941; Emiliani, C., 1954; Hanna, G. D., 1952; Holzman, J. E., 1950; Inman, D. L., 1949, 1950; James, E. L., 1950; Kew, W. S. W., 1928; Lawson, A. C., 1893b; Mason, H. L., 1929; Moore, D. G., 1951; Norris, R. M., 1951; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1949b; 1951b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Stetson, H. C., 1939; Shepard, F. P. and Wrath, W. F., 1937; Shumway, G. A., 1953; Sverdrup, H. U., 1938c; Sverdrup, H. U. and Staff, 1941; Trask, P. D., 1931b; Uchupi, E., 1954

Mixing (See also: Diffusion, Dispersion): Ahlstrom, E. H., 1950; Allen, W. E., 1941a; Bullock, F. W., 1933; California Academy of Sciences, California Department of Fish and Game, Stanford University, Hopkins Marine Station, U. S. Fish and Wildlife Service, South Pacific Fishery Investigation, University of California, Scripps Institution of Oceanography, 1953; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography, U. S. Fish and Wildlife Service, 1950; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, R. S. and LaFond, E. C., 1950; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Emery, K. O., 1954d; Emery, K. O. and Rittenberg, S. C., 1952; Epstein, S. and Mayeda, T., 1953; Fleming, R. H., 1939a, 1940a; Fleming, R. H., 1939a, 1940a; Fleming, R. H. and Moberg, E. G. and Revelle, R., 1937b; Graham, H. W., 1941a; Hidaka, K., 1953; Horrer, P. L., 1948a; Jacobs, W. C., 1949; Kuenen, Ph. H. and Menard, H. W., 1952; Leipper, D. F., 1950; McEwen, G. F., 1929; Mao, H., 1951; Menard, H. W. and Ludwick, J. C., 1951; Moberg, E. G., 1928a, 1930a, 1930b, 1930c; Moberg, E. G. and Fleming, R. H., 1934; Munk, W. H., 1947b; Pattullo, J., 1952; Rawn, A. M. and Bowerman, F. R., 1951; Saur, J. T. F., Jr., 1950; Scripps Institution of Oceanography, 1950g; Sverdrup, H. U., 1938a, 1938b, 1939a, 1939c, 1940c, 1940e, 1940g, 1941a, 1941b; Sverdrup, H. U. and Staff, 1945a, 1947a; Tibby, R. B., 1939, 1941; Trask, P. D., 1939; Uchupi, E., 1954

Mock Valley - see Submarine Canyon

Models (See also: Engineering): Blinn, F. S., 1928; Gee, H. C., 1938; Granthem, K. N , 1953; Hall, W. C., 1938, 1941; Hudson, R. Y. and Moore, L. F., 1951; Lapsley, W. W., 1937; Leeds, C. T., Vanoni, V. A. and Knapp, R. T., 1934; Lillevang, O. J. and Brant, R. W., 1937; Johnson, J. W., 1947a, 1948a, 1948b, 1948d; Johnson, J. W. and Wiegel, R. L., 1953; Knapp, R. T., 1951; Knapp, R. T. and Vanoni, V. A., 1945; McAfee, C. M., Jr., 1939; Meyer, R. D., 1936; Miller, R. L., 1954; Milner, F., 1941; Putnam, J. A. and Bermel, K. J., 1946; Reid, R. O., 1948b; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1935, 1936, 1947a, 1947b, 1947c, 1949, 1950

Molybdenum: Revelle, R. and Emery, K. O., 1951

Mountain Arcs: Lawson, A. C., 1939

Mud (Also see: various mud types): Anonymous, 1944b; Allen, W. E., 1939; Anderson, C. A., 1950; Arnold, D. and Arnold, R., 1902; Arnold, J. L., 1928; Bartholmew, J. W. and Rittenberg, S. C., 1949; Belknap, G. E., 1874a; Bruff, S. C., 1946; Buck, C. D., 1928; California Department of Fish and Game, 1951; California Department of Public Health, 1951; Coe, W. R., 1945; Collins, L. B., 1931; Congressional Documents, 1880a; Coxe, L. C., 1949; Crooke, R. C., Elvitsky, A. W. et al, 1953; Dana, S. W., 1942; Dapples, E. C., 1942; Eldredge, Z. S. and Molera, E. J., 1909; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1939, 1941; Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Ford, J. L. C., 1942; Fox, D. L., 1937, 1944a, 1944b, 1950; Fox, D. L. and Anderson, L. J., 1941; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Fraser, C. McL., 1943; Galliher, E. W., 1933, 1935a, 1935c; Gilbert, G. K., 1917; Gislén, T., 1943, 1944; Harding, C. R., 1929; Hinde, H. P., 1952; Hoots, H. W., 1943; Hoover-Young San Francisco Bay Bridge Commission, 1930; Johnson, M. W., Everest, F. A. and Young, R. W., 1947; Kindle, E. M., 1934; Koe, K. B., Fox, D. L. and Zechmeister, L., 1950; Lesser, R. M., 1951; Louderback, G. D., 1920, 1924, 1940; McKee, E. D., 1939; MacGinitie, G. E., 1935, 1939; Michael, E. L. and McEwen, G. F., 1915; Morrison, R. L., 1930; Moyer, D. A., 1929b; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Norris, R. M., 1951; Novelli, G. D., 1943; Packard, E. L., 1918; Pease, W. H., 1868; Revelle, R., 1939a; San Diego Regional Water Pollution Control Board, 1952; Saur, J. T. F., Jr., 1950; Sears, C. B., 1876; Shepard, F. P., 1938b, 1951a, 1951b; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Smith, A. G. and MacKenzie, G., Jr., 1948; Soper, E. K., 1938; Stevenson, R. E., 1954; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnson, E. C., 1914; Sverdrup, H. U., 1938c, 1939a, 1940d; Sverdrup, H. U. and Staff, 1941; Tanner, Z. L., 1892a; Thayer, L. A., 1937; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Trask, P. D. and Rolston, J. W., 1950a; Trask, P. D. and Wu, C. C., 1930a, 1930b; Vaughan, T. W., 1933, 1935a, 1935b; Wright, R., 1937; ZoBell, C. E., 1935, 1936, 1939, 1941, 1942b, 1946b, 1946-1947, 1947c, 1947d, 1949; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E. and Feltham, C. B., 1942; ZoBell, C. E., Grant, C. W. and Haas, H. F., 1943

Abyssal: Belknap, G. E., 1874a, 1874b; Davidson, G., 1897; Evans, R. D., Kip, A. F. and Moberg, E. G., 1939; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Piggot, C. S., 1932; Revelle, R., 1935; Shepard, F. P., 1949d; Shepherd, E. S., 1946; Tanner, Z. L., 1894; Vaughan, T. W., 1940; White, D., 1911; ZoBell, C. E. and Feltham, C. B., 1942

Bank: Emery, K. O., 1947b, 1948; Hanna, G. D., 1952; Shepard, F. P., 1941a

Basin: Dietz, R. S., 1952a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1953b, 1947c; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Emery, K. O. and Shepard, F. P., 1945; Ford, J. L. C., 1942; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Kuenen, Ph. H., 1946; Ludwick, J. S., Jr., 1950; Phleger, F. B., 1951; Revelle, R., 1939a, 1939b, 1950; Revelle, R. and Emery, K. O., 1951; Shepard, F. P., 1940a, 1941a, 1950e, 1951d; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Smith, P. V., Jr., 1954; Vaughan, T. W., 1940; Weeks, L. G., 1952

Beach and Nearshore: Bruff, S. C., 1946; Congressional Documents, 1940a; Emery, K. O., 1945a; Fox, D. L., 1950; Kindle, E. M., 1934; Kniffen, F. B., 1932; Krumbein, W. C., 1947; Louderback, G.

D., 1920, 1940; Mason, E. H., 1930; Palmer, R. H., 1928; Petracek, F. J., Fox, D. L. and Zechmeister, L., 1951; ZoBell, C. E. and Rittenberg, S. C., 1938

Continental Shelf: Beach Erosion Board, 1952b; Butcher, W. S., 1951a; Davidson, G., 1897; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952; Emery, K. O., 1952a; Emery, K. O. and Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Fox, D. L., 1937; Galliher, E. W., 1933, 1935a, 1935c; Gorsline, D. S., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Hanna, G. D., 1952; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; Marlette, J. W., 1954; Norris, R. M., 1951; Pardee, J. T., 1934; Revelle, R. and Emery, K. O., 1951; Shepard, F. P., 1932, 1949b, 1949d; Shepard, F. P. and MacDonald, G. A., 1938; Thompson, W. C., 1949; Udden, J. A., 1914

Continental Slope: Dill, R. F., 1952; Hanna, G. D., 1952; Udden, J. A., 1914

Submarine Canyons: Anonymous, 1939; Cohee, G. V., 1938; Davidson, G., 1887, 1897; Dill, R. F., Dietz, R. S. and Stewart, H., 1952; Fisher, R. L. and Mills, R., 1952; Kuenen, Ph. H., 1947; Ludwick, J. C., Jr., 1950; Marlette, J. W., 1954; Menard, H. W. and Ludwick, J. C., 1951; Norris, R. M., 1951; Phleger, F. B., 1951; Richardson, R. W., 1923; Shepard, F. P., 1938a, 1938f, 1939d, 1941a, 1947a, 1948b, 1948c, 1950d, 1951a, 1953; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Tanner, Z. L., 1892b, 1894; Woodford, A. O., 1951

Mud Eaters - see Scavengers

Mud Flat (See also: Estuary, Lagoon, Marsh, Salt Flat, Tide Flat): Anonymous, 1942; Bush, J. B., 1930; Galliher, E. W., 1932b; Hanna, M. A., 1926; Hinde, H. P., 1952; Morrison, R. L., 1930; Petracek, F. J., Fox, D. L. and Zechmeister, L., 1951; Sears, C. B., 1876; Sisler, F. D. and ZoBell, C. E., 1950; ZoBell, C. E., 1946-1947

Mudflow - see Submarine Slumping, Turbidity Currents

Mudstone (See also: Rock, Sedimentary Rock): Crouch, R. W., 1954; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a, 1948; Emery, K. O. and Shepard, F. P., 1945; Holzman, J. E., 1950; Moore, D. G., 1951; Shepard, F. P., 1951b; Shepard, F. P. and Emery, K. O., 1941

Natural Bridge (See also: Sea Arch, Sea Cave): Anonymous, 1882a; Drury, N. B., 1936; Leonard, A. G., 1925; Richardson, R. W., 1923; Shaler, N. S., 1894

Natural Levees - see Levees, Natural

Nearshore Profile - see Beach Profile

Nearshore Zone - see Beach and Nearshore

Nickel: Goldberg, E. D., 1954; Lowenstam, H. A., 1954; Revelle, R. and Emery, K. O., 1951; Rotschi, H., 1951; Scripps Institution of Oceanography, 1953e; Thompson, T. G. and Robinson, R. J., 1932

Nip (See also: Minor Features, Rocky Coasts): Gorsline, D. S., 1954; Gulliver, F. P., 1896; Shepard, F. P., 1939a

Nitrogen including nitrogen compounds (See also: Ammonia, C/N Ratio, Gases, Nutrients): Ahlstrom E. H., 1950; Allen, W. E., 1941; Atwill, E. R., 1942; Bigelow, H. B. and Leslie, M., 1930; Brongersma-Sanders, M., 1948; Bullock, F. M., 1933; Crouch, R. W., 1951; Dill, R. F., 1952; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Fleming, R. H., 1939a; Ford, J. L. C., 1942; Fox, D. L., 1950; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Galliher, E. W., 1933, 1935a; Gee, H., 1932; Gislén, T., 1944; Graham, H. W., 1934, 1941b; Hoots, H. W., 1943; Hutton, W. E. and ZoBell, C. E., 1949; Koe, K. B., Fox, D. L. and Zechmeister, L., 1950; Krumbein, W. C., 1942; Lipman, C. B., 1929; McEwen, G. F., 1915, 1934a; Michael, E. L., 1919, 1921; Moberg, E. G., 1925, 1928a, 1928c; Moberg, E. G. and Fleming, R. H., 1934; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937; Revelle, R. and Shepard, F., 1939b; Rittenberg, S. C., 1940; Scripps Institution of Oceanography, 1953e; Sisler, F. D. and ZoBell, C. E., 1951a, 1951b; Smith, P. V., Jr., 1954; Sverdrup, H. U., 1938c, 1939a, 1940e, 1940g, 1941a; Sverdrup, H. U. and Staff, 1942a; Thompson, T. G. and Robinson, R. J., 1932; Tilden, C. A., 1925; Trask, P. D., 1927a, 1927b, 1931b, 1934, 1936, 1939; Trask, P. D. and Hammar, H. E., 1931; Trask, P. D. and Hammar, H. E. and Wu, C. C., 1932; Updegraff, D. M., 1948; Urry, W. D. and Piggot, C. S., 1942; Vaughan, T. W., 1930b, 1930d, 1932a, 1932c, 1936, 1940; Weeks, L. G., 1952; ZoBell, C. E., 1933, 1935, 1938, 1939, 1941, 1942a, 1942b, 1943, 1946b, 1946-1947, 1947b, 1947c, 1947d, 1950; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E. and Feltham, C. B., 1934a, 1942; ZoBell, C. E., Grant, C. W., and Haas, H. P., 1943; ZoBell, C. E. and Rittenberg, S. C., 1938

Nodules (See also: Manganese, Phosphorite): Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Dietz, R. S., 1954; Dietz, R. S. and Emery, K. O., 1938a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1947a, 1947b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Shepard, F. P., 1945; Galliher, E. W., 1932b; Goldberg, E. D., 1954; Hoots, H. W., Blount, A. L. and Jones, P. H., 1935; Piggot, C. S., 1944; Revelle, R. and Emery, K. O., 1951; Shepard, F. P. and Emery, K. O., 1941; Shumway, G. A., 1953; Thompson, T. G. and Robinson, R. J., 1932; Uchupi, E., 1954

Nondeposition (See also: By-passing of Sediment, Winnowing): Crooke, R. C., Elvitsky, A. W. et al, 1953; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1952a; Emery, K. O. and Dietz, R. S., 1950; Galliher, E. W., 1933; Grant, U. S., 1943; Holzman, J. E., 1950; Norris, R. M., 1951; Shepard, F. P., 1932, 1938e, 1939d, 1941a, 1952a; Stevenson, R. E., 1954; Uchupi, E., 1954

Nutrients (See also: Nitrogen, Phosphorous, Silica): Ahlstrom, E. H., 1950; Allen, W. E., 1921c, 1933a, 1941a; Bigelow, H. B. and Leslie, M., 1930; Brongersma-Sanders, M., 1948; California Academy of Sciences, California Department of Fish and Game, Stanford University, Hopkins Marine Station, U. S. Fish and Wildlife Service, South Pacific Fishery Investigation, University of California, Scripps Institution of Oceanography, 1952, 1953; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California and U. S. Fish and Wildlife Service, 1950, 1951b; Carsola, A. J. and Dietz, R. S., 1952; Dawson, E. Y., 1951; Dietz, R. S., 1952a; Dill, R. F., 1952; Emery, K. O., 1954a; Emery, K. O. and Dietz, R. S., 1950; Fleming, R. H., 1939a; Fleming, R. H. and Revelle, R., 1939; Ford, J. L. C., 1942; Fox, D. L., 1950; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Gislen, T., 1944; Goldberg, E. D., Walker, T. J. and Whisenand, A., 1952; Gorsline, D. S., 1954; Graham, H. W., 1934, 1941a, 1941b; Graham, H. W. and Moberg, E. G., 1944; Hidaka, K., 1953; McEwen, G. F., 1934a; Moberg, E. G., 1928a (source of), 1930c; Moberg, E. G. and Fleming, R. H., 1934; Myers, E. H., 1942, 1943; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Revelle, R. and Shepard, F. P., 1939b; Sargent, M. S. and Walker, T. J., 1948; Sommer, H. and Clark, F. N., 1946; Sverdrup, H. U., 1940g, 1941a, 1944b; Sverdrup, H. U. and Allen, W. E., 1939; Sverdrup, H. U. and Staff, 1940, 1941; Thompson, T. G. and Robinson, R. J., 1932; Tibby, R. B., 1939; Tilden, C. A., 1925; Trask, P. D., 1934, 1939; Updegraff, D. M., 1948; Vaughan, T. W., 1930b, 1932b, 1932c, 1934, 1940; ZoBell, C. E., 1941, 1942a, 1942b, 1947b, 1947c, 1947d; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E. and Feltham, C. B., 1942

Ocean Basin - see Basin

Offshore Bars - see Bars

Offshore Troughs - see Troughs

Oil - see Petroleum

Oil Seeps - see Submarine Oil and Gas Seeps

Oligocene: Butcher, W. S., 1951a; Corey, W. H., 1951, 1952; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emiliani, C., 1954; Norris, R. M., 1951; Uchupi, E., 1954

Oolites: Chesterman, C. W., 1952; Dietz, R. S. and Emery,

K. O., 1938b; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1947a; Emery, K. O. and Dietz, R. S., 1950

Oozes, General (See also: Globergerina Ooze, Pelagic Sediments, Pteropod Ooze, Radiolarian Ooze): Davidson, G., 1875b; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Dietz, R. S., 1941 (foraminiferal ooze): Revelle, R., 1935 (siliceous); Shepard, F. P., 1951b; Tanner, Z. L., 1892b; Trask, P. D., 1939; Vaughan, T. W., 1940 (organic)

Organic Matter, including Organic Carbon (See also: Bacteria, C/N Ratio, Diatoms in Relation to Origin of Petroleum; Organic Matter, Decomposition of; Petroleum):

General includes bays, estuaries, lagoons etc.: Ahlstrom, E. H., 1950; Anderson, R., 1927; Atwill, E. R., 1942; California Department of Fish and Game, 1951; Coe, W. R., 1945, 1947; Coe, W. R. and Fox, D. L., 1942; Dana, S. W., 1942; Dapples, E. C., 1942; Dawson, E. Y., 1951; Dietz, R. S., 1952a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., 1952; Emery, K. O., 1950e, 1954b; Emery, K. O. and Dietz, R. S., 1941, 1950; Fox, D. L., 1944a, 1944b, 1950; Fox, D. L., 1944a, 1944b, 1950; Fox, D. L. and Coe, W. R., 1943; Fox, D. L., Crane, S. C. and McConnaughey, B. H., 1948; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Galliher, E. W., 1933, 1935a, 1935c; Gester, G. C., 1927; Gorsline, D. S., 1954; Graham, H. W., 1943; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Hoots, H. W., 1943; Hoots, H. W., Blount, A. L. and Jones, P. H., 1935; Hughes, R. V., 1932; Inman, D. L., 1950; Koe, K. B., Fox, D. L. and Zechmeister, L., 1950; Krumbein, W. C., 1942; Leslie, M. and Moberg, E. G., 1930; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937; Morrison, R. L., 1930; Putnam, J. A., Bermel, K. L. and Johnson, J. W., 1947; Revelle, R., 1938, 1941, 1950; Revelle, R. and Emery, K. O., 1951; Revelle, R. and Shepard, F. P., 1939b; Rittenberg, S. C., 1940; Rosenfeld, W. D., 1948; San Diego Regional Water Pollution Control Board, 1952; Smith, P. V., Jr., 1954; Stevenson, R. E., 1954; Stevenson, R. E. and Emery, K. O., 1951; Sverdrup, H. U., 1939a, 1940d, 1940g, 1941a; Takahaski, J., 1925; Thayer, L. A., 1937; Trask, P. D., 1927a, 1927b, 1928, 1930, 1931b, 1932a, 1934, 1936, 1939; Trask, P. D. and Hammar, H. E., 1931; Trask, P. D., Hammar, H. E. and Wu, C. C., 1932; Trask, P. D. and Wu, C. C., 1930a, 1930b; Vaughan, T. W., 1940; Weeks, L. G., 1952; ZoBell, C. E., 1938, 1939, 1941, 1942b, 1943, 1944, 1946b, 1946-1947, 1947b, 1947c, 1947d, 1949, 1950; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E. and Feltham, C. B., 1934, 1942; ZoBell, C. E., Grant, C. W. and Haas, H. F., 1943; ZoBell, C. E. and Rittenberg, S. C., 1938

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Bank: Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1948, 1954b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Holzman, J. E., 1950; Uchupi, E., 1954

Basin: Corey, W. H., 1952; Emery, K. O., 1954b, 1954d; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Fleming, R. H. and Revelle, R., 1939; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Pratt, W. E., 1947; Revelle, R., 1939b; Revelle, R. and Shepard, F. P., 1939b; Smith, P. V., Jr., 1954; Trask, P. D., 1927a, 1927b, 1928, 1930, 1931b, 1939; Weeks, L. G., 1952; Woodring, W. P., 1938a; ZoBell, C. E., 1935

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Profile of Equilibrium - see Equilibrium

Prograding - see Accretion

Promitories - see Headlands

Pteropod Ooze - (See also: Pelagic Sediments): Emery, K. O. and Dietz, R. S., 1941; Michael, E. L., 1919; Shepard, F. P., 1932; Vaughan, T. W., 1940

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Quartzite (See also: Metamorphic Rocks, Rocks): Butcher, W. S., 1951a; Clements, T. and Dana, S. W., 1944; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Gorsline, D. S., 1954; Hanna, G. D., 1952; Holzman, J. E., 1950; Shepard, F. P., 1938e; Shepard, F. P. and MacDonald, G. A., 1938; Shumway, G. A., 1953; Uchupi, E., 1954

Quarternary: Ashley, G. H., 1931; Cohee, G. V., 1938; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Shepard, F. P., 1945; Hubbs, C. L., 1948; LeConte, J., 1891; Nelson, R. N. and Schenck, H. G., 1928; Shepard, F. P., 1938f, 1950e; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Trask, P. D., 1950

Radiation: Bigelow, H. B. and Leslie, M., 1930; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography, U. S. Fish and Wildlife Service, 1950; Coe, W. R., 1948; Cummings, N. W., 1950; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Fleming, R. H. and Revelle, R., 1939; Graham, H. W. and Moberg, E. G., 1944; LaFond, E. C., 1939a; Leipper, D. F., 1947; McEwen, G. F., 1916, 1919a, 1929, 1930a, 1930c, 1933, 1934a, 1934b, 1934d, 1936, 1937b, 1937c, 1937d, 1937-1938; Moberg, E. G., 1928a, 1930c; Neiburger, M., 1948; Richardson, B., 1930, 1935; Sverdrup, H. U., 1938a, 1939c, 1944b; Tibby, R. B., 1941; Vaughan, T. W., 1930b, 1932c

Radioactivity including Radioactive elements: Anonymous, 1950; Devaputra, D., Thompson, T. G. and Utterback, C. L., 1932; Evans, R. D., 1934; Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Goldberg, E. D., 1954; Goldberg, E. D., Baker, M. and Fox, D. L., 1952; Havemann, H., 1952; Karlik, B., Foyn, E., Petterson, H. and Rona, E., 1939; Lowenstam, H. A., 1954; McEwen, G. F., 1934a; Piggot, C. S., 1932, 1944; Piggot, C. S. and Urry, Wm. D., 1942; Revelle, R., 1935; Scripps Institution of Oceanography, 1953e; Sverdrup, H. U., 1940e; Thompson, T. G. and Robinson, R. J., 1932; Urry, W. D., 1940, 1948; Urry, W. D. and Piggot, C. S., 1942; Vaughan, T. W., 1935a; Vaughan, T. W. and others, 1937; Woollard, G. P. (chairman), 1951; ZoBell, C. E., 1947d, 1950

Radiolarian Ooze and Radiolaria (Also see: Pelagic Sediments): Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Dietz, R. S., 1950; Michael, E. L., 1919; Revelle, R., 1935; Shumway, G. A., 1953; Topp, E. P., 1929; Vaughan, T. W., 1940

Radium - see Radioactivity

Radon - see Radioactivity

Rafting (See also: Floating of Sediments): Brooks, C. W., 1875; Cockerell, T. D. A., 1938b; Davidson, 1873a, 1873b; Davis, H., 1872; Emery, K. O., 1941c, 1950d, 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Ewing, G. C., 1950c; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Haase, L. G., 1926; Hanna, G. D., 1951, 1952; Ludwick, J. C., Jr., 1950; Shaler, N. S., 1896; Shepard, F. P., 1932, 1941a, 1948c, 1949b, 1949d, 1951b, 1951d; Shepard, F. P. and MacDonald, G. A., 1938; Shumway, G. A., 1953; Wooster, W. S., 1952

Raised Beaches (See also: Terraces): Griggs, A. B. and Wells, F. G., 1942; Trask, P. D., 1931b

Recreation: Anonymous, 1938a, 1938b, 1940b, 1941b, 1954b; Beach Erosion Board, 1948h, 1948i, 1954a, 1954c; Brown, E. I., 1939; Butler, M. M., 1936; California Legislature, 1931b; California Bureau of Sanitary Engineering, 1952; Chace, B. W., 1953; Congressional Documents, 1938a, 1940e, 1941, 1949b, 1949d, 1949f, 1949-1950b, 1953b; Erickson, C. E., 1952, 1953; Friedman, S. L., 1949; Gillespie, C. G., 1936; Griffin, D. F., 1944; Hall, W. C., 1942; Hannum, G. W. T., 1944, 1947; Hjelte, G., 1938; Lamport, H. B., 1937; Larsen, G. P., 1941, 1942a, 1946; Leeds, C. T., 1946; Los Angeles County Regional Planning Commission, 1940, 1946; Nicholls, C. P. L., 1936b, 1936c, 1939, 1941; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1939; Orange County Planning Commission, 1941; Place, J. L., 1952; Postel, A. C., 1939; Pyles, E. E., 1954; San Diego Regional Water Pollution

Control Board, 1952; Shuler, W. R., 1951, 1952; Smith, J. S., 1937; Stapleton, C. R., 1952; Woodson, J. B., 1941
Recrystalization: Krumbein, W. C., 1942
Red Clay (See also: Clay, Color of Sediments, Limonite, Pelagic Sediments): Dietz, R. S., 1952a; Dill, R. F., 1952; Emery, K. O., 1954b; Emery, K. O. and Dietz, R. S., 1941; Goldberg, E. D., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Kuenen, Ph. H., 1946; Michael, E. L., 1919; Piggot, C. S., 1932, 1944; Piggot, C. S. and Urry, W. D., 1942; Revelle, R., 1935, 1937b; Rittenberg, S. C., 1940; Shepard, F. P., 1941a; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Shepard, F. P. and Stetson, H. C., 1939; Shepherd, E. S., 1940, 1946; Shumway, G. A., 1953; Sverdrup, H. U., 1939a; Urry, W. D., 1948; Urry, W. D. and Piggot, C. S., 1942; Vaughan, T. W., 1940
Red Sand (See also: Color of Sediments, Limonite): Alden, J., 1856; Bache, A. D., 1852, 1856a; Crooke, R. C., Elvitsky, A. W. et al, 1953; Moore, D. G., 1951
Red Sediments (See also: Color of Sediments, Irox Oxides and Hydroxides, Limonite, Red Clay, Red Sand): Gorsline, D. S., 1954
Reducing or Anaerobic Environment (See also: Bacteria, Eh, Hydrogen Sulfide, Stagnant Conditions): Cartwright, L. D., Jr., 1928; Dill, R. F., 1952; Emery, K. O. and Rittenberg, S. C., 1952; Fox, D. L., 1944a; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Galliher, E. W., 1933, 1935a, 1935c; Gee, H., 1932; Krumbein, W. C., 1942; Louderback, G. D., 1940; Marlette, J. W., 1954; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937; Piggot, C. S., 1932, 1944; Revelle, R. and Shepard, F. P., 1939b; Scripps Institution of Oceanography, 1953e; Stevenson, R. E., 1954; Trask, P. D., 1939; ZoBell, C. E., 1935, 1936, 1938, 1939, 1942b, 1943, 1944, 1946b, 1947c, 1950; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E., Grant, C. W. and Haas, H. F., 1943
Reducing Capacity, Power or Intensity (See also: Eh): Trask, P., 1939; ZoBell, C. E., 1936, 1939, 1942b, 1944; ZoBell, C. E. and Anderson, D. Q., 1936
Red Water, Yellow Water etc. (See also: Dinoflagellates, Mass Mortality, Turbid Water): Anonymous, 1943; Allen, W. E., 1921c, 1921d, 1921e, 1927c, 1928b, 1928c, 1933b, 1935, 1937a, 1938c, 1940b, 1940d, 1941c, 1943, 1946a, 1946b; Bonnot, P. and Phillips, J. B., 1938; Brongersma-Sanders, M., 1948; Connell, C. H. and Cross, J. B., 1950; Cupp, E. E., 1943; Dawson, E. Y., 1951; Ford, J. L. C., 1942; Kniffen, F. B., 1932; Kofoid, C. A., 1911; Michael, E. L., 1911; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Nightingale, H. W., 1937; Osorio Tafall, B. F., 1943; Pinckard, J. H., Kittredge, J. S., Fox, D. L., Haxo, F. T. and Zechmeister, L., 1953; Revelle, R., 1950; Ritter, W. E., 1902; Sommer, H. and Clark, F. N., 1946; Streets, T. H., 1878; Sverdrup, H. U. and Staff, 1941; Tanner, Z. L., 1896; Torrey, H. B., 1902; U. S. Hydrographic Office, 1875; ZoBell, C. E., 1947c
Reefs including Coral Reefs (See also: Corals): Atwill, E. R., 1942; Blake, W. P., 1856; Daly, R. A., 1934; Dietz, R. S., Menard, H. W., and Hamilton, E. L., 1954; Fewkes, J. W., 1889; Fox, L. S., 1930; Heck, N. H., 1926; Hertlein, L. G. and Emerson, W. K., 1953; Kindle, E. M., 1934; Krumbein, W. C., 1947; Pease, W. H., 1868; Shepard, F. P., 1932, 1936c, 1941a, 1948, 1949b, 1949d, 1949e (atoll), 1950c, 1950g, 1952a (atoll); Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Grant, U. S., 1947; Smith, P. A., 1940 (atoll); Smith, W. D., 1933c; Vaughan, T. W., 1931, 1940; White, D., 1911
Reflection (See also: Light Reflection off Sea Water, Wave Refraction): Neiburger, M., 1948
Refraction - see Light, Wave Refraction
Regeneration (See also: Diagenesis, Nutrients, Solution and various diagenetic processes related to regeneration): California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California, and U. S. Fish and Wildlife Service, 1951a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Rittenberg, S. C., 1952; Fleming, R. H., 1939a; Holzman, J. E., 1950 (resolution); Koczy, F. F., 1954 (resolution); Michael, E. L., 1921
Replacement (See also: Diagenesis): Krumbein, W. C., 1942
Residual Sediments (See also: Gravel, i.e. lag gravel): Emery, K. O., 1947b, 1952a; Handin, J. W., 1951; Shepard, F. P., 1940c
Retrograding, Retrogradation - see Beach Erosion
Reworking of Sediments (See also: Nondeposition, Winnowing of Sediments): Crouch, R. W., 1954; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Holzman, J. E., 1950; Shepard, F. P., 1941a
Rhyolite (See also: Igneous Rock, Rock): Chesterman, C. W., 1952; Emery, K. O., 1948; Emery, K. O. and Shepard, F. P., 1945; Norris, R. M., 1951; Shumway, G. A., 1953
Ridges (See also: Beach Ridge): Allen, V. E., 1945; Bates, C. C. and Glenn, A. H., 1948; Blake, W. P., 1856; Bucher, W. H., 1939, 1940; Burt, W. V. and Saur, J. F. T., Jr., 1948; Buwalda, J. P., 1948; Colbert, L. O., 1939; Crowell, J. C., 1952; Davidson, G., 1856, 1887, 1897; Davis, W. M., 1933; Dietz, R. S., Menard, H. W. and Hamilton, E. L., 1954; Dunkle, M. B., 1950; Eardley, A. J., 1954; Emery, K. O., 1950a, 1954a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emiliani, C. and Epstein, S., 1953; Emmonds, S. F. and Merrill, G. P., 1894; Galliher, E. W., 1933; Gorsline, D. S., 1954; Grant, U. S. and Shepard, F. P., 1940; Hanna, G. D., 1952; Hertlein, L. G. and Emerson, W. K., 1953; Hill, R. T., 1928b; Hinds, N. E. A., 1952; Holzman, J. E., 1950; Inman, D. L., 1950; Isaacs, J. D., Schorr, S. and Chinn, A. J., 1947; Krynine, P. D., 1937; Lawson, A. C., 1924; Ludwick, J. C., Jr., 1950; MacDonald, G. A., Shepard, F. P. and Cox, D. C., 1947; Menard, H. W., 1952; Menard, H. W. and Dietz, R. S., 1951; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shumway, G., Silverman, M. and Stewart, H. B., 1954; Munk, W. H., 1948; Munk, W. H. and Traylor, M. A., 1947; Norris, R. M., 1951; Peel, K. P., 1951; Remondino, P. C., 1892; Revelle, R., 1938, 1939b, 1950; Revelle, R. and Shepard, F. P., 1939a, 1939b; Shepard, F. P., 1932, 1937c, 1937e, 1941a, 1948c, 1950e, 1952a; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P. and Inman, D. L., 1949, 1951a; Smith, W. S. T., 1900 (also origin of ridges); Sverdrup, H. U., 1939a, 1939b, 1940b, 1940g; Thompson, W. O., 1937; Trask, P. D., 1930, 1931a, 1932a, 1936, 1939; Trask, P. D. and Hammar, H. E., 1931; Uchupi, E., 1954; Vaughan, T. W., 1940; Veach, J. A., 1859; Woodring, W. P., 1938a
Beach and Nearshore: Dietz, R. S., 1947b; Hall, J. V., Jr., 1952; Hanna, M. A., 1926; Hertlein, L. G., and Grant, U. S., 1944; Hoots, H. W., 1943; Johnson, D. W., 1910, 1944; McKee, E. D., 1953; Munk, W. H. and Traylor, M. A., 1947; Norris, R. M., 1952; O'Brien, M. P., 1947b; Richardson, R. W., 1923; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1944g; Shepard, F. P., 1942a, 1949a, 1950f, 1950g, 1952b; Smith, W. D., 1933c; Thompson, W. O., 1937
Coastal Sand Dunes: Blake, J., 1868a, 1868b (sand barrier); Gulliver, F. P., 1896; Merriam, P. D., 1949
Submarine Canyons: Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Leipper, D. F., 1950; Menard, H. W. and Ludwick, J. C., 1951; Shepard, F. P., 1948b, 1950d; Shepard, F. P. and Emery, K. O., 1941
Rift Valley: Emery, K. O. and Shepard, F. P., 1945
Rill Marks or Rills: Bucher, W. H., 1940; Emery, K. O. and Foster, 1948; Emery, K. O. and Gale, J. F., 1951; Grant, U. S., 1946; Herold, C. L., 1934; McKee, E. D., 1953; Thompson, W. O., 1937
Rip Currents, Rip Tides, Undertow: Anonymous, 1916a, 1941a; Arthur, R. S., 1950; Brant, I., 1925; Congressional Documents, 1949f; Couch, E. B., 1915; Crowell, J. C., 1947, 1952; Davis, W. M., 1925; Deacon, G. E. R., 1949; Dietz, R. S., 1947b; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1949; Diller, J. S., 1902;

Eaton, R. O., 1951; Emery, K. O. and Gale, J. F., 1951; Grant, U. S., 1943; Grant, U. S. and Shepard, F. P., 1940; Handin, J. W., 1949; Handin, J. W. and Ludwick, J. C., 1949; Inman, D. L., 1950, 1953a, 1953b; Inman, D. L. and Quinn, W. H., 1952; Knudsen, V. O., Alford, R. S. and Emiling, J. W., 1948; Livingston, A., Jr., 1939; Ludwick, J. C., Jr., 1950; Munk, W. H., 1949b; Munk, W. H. and Traylor, M. A., 1945, 1947; Nicholls, C. P. L., 1936a, 1936b, 1939, 1941; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951; Putnam, J. A., Munk, W. H. and Traylor, M. A., 1949; Scripps Institution of Oceanography, 1945c, 1952i; Shepard, F. P., 1936a, 1937b, 1938f, 1943b, 1947a, 1948b, 1949a, 1949b, 1950b, 1950c, 1950f, 1950g, 1951a; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and Inman, D. L., 1949, 1951a; Shepard, F. P. and LaFond, E. C., 1939, 1942; Shepard, F. P. and Sayner, D. B., 1953; Skogsberg, T., 1936; Sverdrup, H. U. and Staff, 1940, 1942a; Wiegel, R. L., 1947b

Ripple Marks: Beach Erosion Board, 1952b; Buffington, E. C., 1951; Dietz, R. S., 1954; Dietz, R. S. and Menard, H. W., 1951b; Emery, K. O., 1947b, 1948, 1952b, 1953b; Emery, K. O. and Natland, M. L., 1952; Herold, C. L., 1934; Landes, K. K., 1952a, 1952b; Lesser, R. M., 1951; McKee, E. D., 1939; Menard, H. W., 1952; Scripps Institution of Oceanography, 1952i; Shepard, F. P., 1948b, 1949b, 1949d, 1951a, 1951b; Shepard, F. P. and Emery, K. O., 1945

Beach and Nearshore: Beach Erosion Board, 1948b, 1952a, 1954b; California, University of, 1952a, 1954a; Emery, K. O., 1945a, 1945b, 1946b; Isaacs, J. D., 1947a; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, D. W., 1910; Johnson, J. W., 1952; Lakes, A., 1903a; McKee, E. D., 1953; Munk, W. H. and Traylor, M. A., 1945; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Shepard, F. P., 1950b, 1950f; Sverdrup, H. U. and Staff, 1942a; Thompson, W. O., 1937; Woodford, A. O., 1935

Coastal Sand Dunes: Olsson-Seffer, P., 1910a; Thompson, W. O., 1937

Rivers - see Streams

Rock (See also various rock types): Allen, W. E., 1939; Andrews, H. L., 1945; Bache, A. D., 1856c, 1859, 1864b; Bartlett, W. A., 1852; Bascom, W. N., 1950b; Belknap, G. E., 1874a; Blake, W. P., 1856; Bruff, S. C., 1946; Clark, A., 1933; Coe, W. R., 1945; Crooke, R. C., Elvitsky, A. W., et al, 1953; Dapples, E. C., 1942; Davidson, G., 1856, 1875b; Dietz, R. S., 1952b; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a, 1951, 1952b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Shepard, F. P., 1941, 1945; Everest, F. A., Young, R. W. and Johnson, M. W., 1948; Fox, D. L., 1950; Fraser, C. McL., 1943; Garrison, L. E. and Takasaki, K. L., 1950; Gislén, T., 1943, 1944; Hanna, G. D., 1951; Hansen, H. A. and Pemberton, J. R., 1950; Hoover-Young San Francisco Bay Bridge Commission, 1930; Inman, D. L., 1949; Johnson, M. W., Everest, F. A. and Young, R. W., 1947; Lawson, J. S., 1862; Lawton, C. H., 1936; Leypoldt, H., 1941a; Louderback, G. D., 1924, 1940, 1951; Menard, H. W., 1952; Menard, H. W. and Ludwick, J. C., 1951; Michael, E. L. and McEwen, G. F., 1915; Morrison, R. L., 1930; Norris, R. M., 1951; Purcell, G., 1914; Revelle, R., 1939a; Revelle, R. and Shepard, F. P., 1939a, 1939b; Rodgers, A. F. and Bache, A. D., 1864; Saur, J. T. F., Jr., 1950; Schupp, R. D., 1953; Shepard, F. P., 1938d, 1948c, 1950e; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Smith, A. G. and MacKenzie, G., Jr., 1948; Sverdrup, H. U., 1938c, 1940e; Tanner, Z. L., 1892a, 1894; Trask, P. D., 1931b; Varney, F. M. and Redwine, L. E., 1937; Weeks, L. G., 1952; Williamson, R. S. and Heuer, W. H., 1871

Banks and Seamounts: Bache, A. D., 1856b; Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Clements, T. and Emery, K. O., 1947; Dietz, R. S. and Emery, K. O., 1938b; Emery, K. O., 1947c, 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Rittenberg, S. C., 1952; Emery, K. O. and Shepard, F. P., 1945; Garrison, L. E. and Takasaki, K. L., 1950; Hanna, G. D., 1952; Holzman, J. E., 1950; Lawson, A. C., 1924; Shepard, F. P., 1939d, 1940a, 1941a, 1947b; Shepard, F. P. and Emery, K. O., 1941, 1945; Shumway, G. A., 1953; Tanner, Z. L., 1892a; Uchupi, E., 1954

Basins: Garrison, L. E. and Takasaki, K. L., 1950; Weeks, L. G., 1952

Beach and Nearshore: Anonymous, 1916a, 1938a, 1938b; Allen, W. E., 1941a; Bascom, W. N., 1946b, 1948a; Bruff, S. C., 1946; California, University of, 1954b; Congressional Documents, 1938a, 1940a, 1940c, 1949f; Davis, W. M., 1925; Emery, K. O., 1945b; Emery, K. O. and Stevenson, R. E., 1950 (beach rock); Emery, K. O. and Tschudy, R. H., 1941; Kniffen, F. B., 1932; Lawton, C. H., 1936; Norris, R. M., 1951; Schupp, R. D., 1953; Shepard, F. P., 1950b; Trask, P. D., 1952b; Vaughan, T. W., 1940

Continental and Insular Shelves: Butcher, W. S., 1951a; Crouch, R. W., 1954; Emery, K. O., 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1941, 1945; Fairbanks, H. W., 1897; Gorsline, D. S., 1954; Handin, J. W., 1949; Inman, D. L., 1950; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; MacDonald, G. A., 1934; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shymway, G., Silverman, M. and Stewart, H. B., 1954; Moore, D. G., 1951; Norris, R. M., 1951; Pardee, J. T., 1934; Pratt, W. E., 1947; Putnam, W. C., 1937b; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1932, 1935e, 1939b, 1940a, 1940c, 1940e, 1941a, 1949b, 1949d; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937 (insular shelf)

Continental Slope: Emery, K. O. and Shepard, F. P., 1945; Hanna, G. D., 1952; Shepard, F. P., 1940c, 1941a, 1941c

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Continental and Insular Shelves: Butcher, W. S., 1951a; Cohee, G. V., 1938; Crouch, R. W., 1954; Davidson, G., 1897; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, H. W. and Menard, H. W., 1951b; Emery, K. O., 1947c; Fairbanks, H. W., 1897; Fisher, R. L. and Mills, R., 1952; Garrison, L. E. and Takasaki, K. L., 1950; Gorsline, D. S., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Handin, J. W., 1949; Hanna, G. D., 1952; Inman, D. L., 1950; LaFond, E. C., Dietz, R. S. and Knauss, J. A., 1950; MacDonald, G. A., 1934; Marlette, J. W., 1954; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shumway, G., Silverman, M., Stewart, H. B., 1954 (insular shelf); Moore, D. G., 1951; Norris, R. M., 1951; Pardee, J. T., 1934; Scripps Institution of Oceanography, 1952i; Shepard, F. P., 1932, 1934a, 1939b, 1949b, 1949d; Shepard, F. P. and Emery, K. O., 1945; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937 (insular shelf); Thompson, W. C., 1949; Udden, J. A., 1914

Continental Slope: Udden, J. A., 1914

Submarine Canyons: Cohee, G. V., 1938; Congressional Documents, 1953b; Davidson, G., 1887, 1897; Davis, W. M., 1933; Dietz, R. S. and Emery, K. O., 1938a; Dill, R. F., Dietz, R. S. and Stewart, H., 1952, 1954; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Tschudy, R. H., 1941; Fisher, R. L. and Mills, R., 1952; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Handin, J. W., 1949; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Ludwick, J. C., Jr., 1950; Marlette, J. W., 1954; Menard, H. W. and Ludwick, J. C., 1951; Phleger, F. B., 1951; Revelle, R. and Shepard, F. P., 1939b; Scripps Institution of Oceanography, 1952i; Shepard, F. P., 1932, 1933c, 1934a, 1938a, 1939d, 1941a, 1948b, 1949e, 1950a, 1950d, 1950g, 1951a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Revelle, R. and Dietz, R. S., 1939; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Shepard, F. P. and Wrath, W. F., 1937; Woodford, A. O., 1951

Sand Layers: i.e., in basins and submarine canyons: Crouch, R. W., 1954; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Ludwick, J. C., Jr., 1950; Phleger, F. B., 1951; Revelle, R., 1939a; Shepard, F. P., 1950a, 1951a, 1951b; Shepard, F. P. and Emery, K. O., 1941

Sandstone (See also: Rock, Sedimentary Rocks): Blake, J., 1868b; Butcher, W. S., 1951a, 1952a; Chesterman, C. W., 1952; Cohee, G. V., 1938; Davidson, G., 1875a; Emery, K. O., 1941b, 1941c, 1945a, 1946b, 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Foster, J. F., 1948; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Goodyear, W. A., 1873; Hinds, N. E. A., 1952; Holzman, J. E., 1950; Hoover-Young San Francisco Bay Bridge Commission, 1930; Inman, D. L., 1950; Landes, K. K., 1952a; Menard, H. W., Dill, R. F., Hamilton, E. L., Moore, D. G., Shumway, G., Silverman, M. and Stewart, H. B., 1954; Moore, D. G., 1951; Norris, R. M., 1951; Shepard, F. P., 1935c, 1936f, 1949b, 1949d, 1953; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Grant, U. S., 1947; Shumway, G. A., 1953; Thompson, W. O., 1937; Uchupi, E., 1954; ZoBell, C. E., 1946b

Sand Waves: Gibson, W. M., 1951; Knox, R. W., 1953; Smith, P. A., 1940; Studds, R. F. A., 1950

Sapropel: Fox, D. L., 1950; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Trask, P. D., 1939; ZoBell, C. E., 1947d

Scattering Layer: Anonymous, 1951a; Boden, B. P., 1950;

California, University of, 1942, 1943, 1946a, 1946b, 1946c; Dietz, R. S., 1948; Emery, K. O., 1952b; Johnson, M. W., 1948; McEwen, G. F. and Staff, 1948; Marshall, N. B., 1951; Tucker, G. H., 1951; Walford, L. A., 1951

Scavengers, Mud Eaters (See also: Organisms): Coe, W. R., 1947; Dapples, E. C., 1942; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., 1952; Emery, K. O., 1952b; Emery, K. O. and Rittenberg, S. C., 1952; Fox, D. L., 1944b; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Galliher, E. W., 1935a; Goldberg, E. D., 1954; Gorsline, D. S., 1954; Hesse, R., Allee, W. C. and Schmidt, K. P., 1937; Hoots, H. W., 1943; McConnaughey, B. H. and Fox, D. L., 1949; MacGinitie, G. E., 1939; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Revelle, R. and Shepard, F. P., 1939b; Scripps Institution of Oceanography, 1952i; Vaughan, T. W., 1940

Schist (See also: Metamorphic Rocks, Rock): Butcher, W. S., 1951a; Cohee, G. V., 1938; Emery, K. O., 1947b, 1948; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Hanna, G. D., 1952

Scouring: Beach Erosion Board, 1952a; Blinn, F. S., 1928; California, University of, 1952a; Crooke, R. C., Elvitsky, A. W., et al, 1953; Crowell, J. C., 1952; Dietz, R. S., 1954; Emery, K. O., 1952; Gibson, W. M., 1951; Grant, U. S., 1940; Johnson, J. W., 1948b; LeConte, J., 1891; McOuat, H. W., 1951; Menard, H. W., 1952; Nicholls, C. P. L., 1936a; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Rawn, A. M. and Bowerman, F. R., 1951; Sears, C. B., 1876; Stevenson, R. E., 1954; Tanner, Z. L., 1892b

Sea Arch (See also: Natural Bridge, Sea Caves): Anonymous, 1882a; Arnold, R. and Hannibal, H., 1913; Blake, W. P., 1856; Blankinship, J. W. and Keeler, C. A., 1892; Cleland, H. F., 1910; Hanna, G. D., 1951; Henderson, J., 1932; Hoover, J. W., 1932a; Livingston, A., Jr., 1939; Leonard, A. G., 1925; McLellan, M. E., 1925; Paguirigan, F., 1941; Shepard, F. P. and Grant, U. S., 1947; Smith, W. D., 1933c; Wittich, E., 1920; Yates, L. G., 1890a, 1902

Sea Caves (See also: Natural Bridge, Sea Arch): Blake, W. P., 1856; Blankinship, J. W. and Keeler, C. A., 1892; Bowers, S., 1878; Chase, A. W., 1875; Cleland, H. F., 1910; Crandall, H., 1915; Davis, W. M., 1932; Emery, K. O., 1954e; Fairbanks, H. W., 1904; Fewkes, J. W., 1889; Hanna, G. D., 1951; Hanna, M. A., 1926; Henderson, J., 1932; Hertlein, L. G. and Grant, U. S., 1937; Hinds, N. E. A., 1952; Hoover, J. W., 1932a; Kemnitzer, L. E., 1933; Lakes, A., 1903a; Lange, A., 1954; Lawson, A. C., 1893b; Leonard, A. G., 1925; McLellan, M. E., 1925; Orr, P. C., 1952; Pease, W. H., 1868; Remondino, P. C., 1892; Richardson, R. W., 1923; Shaler, N. S., 1895; Shepard, F. P. and Grant, U. S., 1947; Smith, W. D., 1933c; Spencer, J. W., 1897; Wilson, M. E., 1907; Winsted, H. L., 1913; Yates, L. G., 1890a, 1890b, 1902

Sea Cliff (See also: Elevated Sea Cliff, Rocky Coasts): Anonymous, 1940d, 1949a; Alexander, C. S., 1950; Anderson, C. A., 1950; Arnold, D. and Arnold, R., 1902; Arnold, R., 1900; Ashley, G. H., 1895; Bailey, T. L., 1943; Bartlett, W. A., 1852; Beach Erosion Board, 1942a, 1953a, 1954a; Blake, W. P., 1856; Bowers, S., 1878; Bremner, C. St., J., 1932; Bruff, S. C., 1940, 1946; Buwalda, J., 1936; Chase, A. W., 1875; Cleland, H. F., 1910; Congressional Documents, 1940a, 1949f, 1953b; Cotton, C. A., 1942; Couch, E. B., 1915; Crandall, H., 1915; Davidson, G., 1856, 1875a, 1897; Davis, W. M., 1932; Davis, W. M., Putnam, W. C. and Richards, G. L., Jr., 1931; Dietz, R. S. and Menard, H. W., 1951b; Diller, J. S., 1902, 1903; Drury, N. B., 1938; Dunkle, M. B., 1944, 1950; Emery, K. O., 1946b, 1950d, 1952a, 1954e; Emery, K. O. and Dietz, R. S., 1950; Erickson, C. E., 1952, 1953; Fairbanks, H. W., 1897, 1898, 1904; Fewkes, J. W., 1889; Gilbert, G. K., 1917; Goldberg, J., 1940; Gorsline, D. S., 1954; Grant, U. S. and Shepard, F. P., 1937; Griesbach, J. O., 1947; Gulliver, F. P., 1896; Hall, W. C., 1942; Handin, J. W., 1949, 1951; Hanna, G. D., 1951, 1952; Hanna, M. A., 1926; Hinds, N. E. A., 1952; Horton, D. F., 1948; Inman, D. L., 1953a, 1953b; James, E. L., 1950; Johnson, A. G., 1935; Johnson, C. W., 1953; Kemnitzer, L. E., 1933; Kew, W. S. W., 1927; Krumbein, W. C., 1947; Lange, A., 1954; Lawson, A. C., 1893a, 1893b, 1894; Lawson, J. S., 1862; Livingston, A., Jr., 1939; Leonard, A., 1925; McGee, W. J., 1900; MacDonald, G. A., 1934; MacDonald, G. A., Shepard, F. P. and Cox, D. C., 1947; Masters, P., 1840; Moore, D. G., 1951; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1949, 1951; O'Brien, M. P., 1939; Paguirigan, F., 1941; Pardee, J. T., 1934; Place, J. L., 1952; Poss, E. G., 1937; Putnam, W. C., 1937b, 1937c, 1938; Reed, R. D., 1930a; Reiche, P., 1937; Shaler, N. S., 1895; Shepard, F. P., 1943b, 1949b, 1950c, 1950e; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P., Grant, U. S. and Dietz, R. S., 1939; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937; Smith, W. D., 1933a, 1933b, 1933c; Smith, W. S. T., 1898, 1900; Spencer, J. W., 1897; Stock, C., 1936; Swinnerton, A. C., 1927; Trask, P. D., 1952b; Trowbridge, W. P., 1856b; Twenhofel, W. H., 1943; Upson, J. E., 1951; Willis, B., 1900; Wheeler, G., 1936; Whitney, J. D., 1865

Sea Level (See also: Sea Level Changes; Sea Level Changes, Glacial): Disney, L. P. and Overshiner, W. H., 1925; Grant, U. S., 1943; Hoover-Young San Francisco Bay Bridge Commission, 1930; LaFond, E. C., 1939a; Leypoldt, H., 1941a; Marmer, H. A., 1928; Meaney, C., 1949; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Shalowitz, A. L., 1951; Shepard, F. P. and LaFond, E. C., 1942; Sverdrup, H. U., 1939a

Sea Level Changes (See also: Sea Level; Sea Level Changes, Glacial): Alexander, C. S., 1950; Anderson, W., 1939; Avers, H. G., 1927; Beach Erosion Board, 1953c; Bowie, W., 1936; Bucher, W. H., 1940; Butcher, W. S., 1951a; California, University of, 1952a; Carsola, A. J. and Dietz, R. S., 1952; Carter, G. F., 1948; Clements, T. and Dana, S. W., 1944; Cockerell, T. D. A., 1938b; Cohee, G. V., 1938; Cotton, C. A., 1942, 1944; Crooke, R. C., Elvitsky, A. W., et al, 1953; Davidson, G., 1875a; Davis, W. M., 1932, 1933; Davis, W. M., Putnam, W. C., and Richards, G. L., Jr., 1931; Dietz, R. S., 1947a, 1952a; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952; Emery, K. O., 1950c, 1952a, 1952b, 1954e; Emery, K. O. Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Natland, M. L., 1952; Galliher, E. W., 1935c; Gilluly, J. and Grant, U. S., 1947; Gislén, T., 1943, 1944; Goldberg, J., 1940; Goodyear, W. A., 1873; Grant, U. S. and Shepard, F. P., 1938a; Gutenberg, B., 1933, 1941b; Hall, J. V., Jr., 1952; Handin, J. W., 1949; Hess, H. H. and MacClintock, P., 1936; Holzman, J. E., 1950; Ives, R. L., 1951; Jacobs, W. C., 1939; Johnson, D. W., 1944; Kuenen, Ph. H., 1947; LaFond, E. C., 1938, 1939a, 1940; Landes, K. K , 1952b; Lawson, A. C., 1948; LeConte, J., 1891; Louderback, G. D., 1941, 1951; Lucke, J. B., 1938; Leypoldt, H., 1934, 1937a, 1941c, 1947; Leypoldt, H., and McHenry, J. R., 1942; MacDonald, G. A., 1934; Marmer, H. A., 1949, 1952; Meaney, C. D., 1949; Merriam, P. D., 1949; Munk, W. H. and Traylor, M. A., 1947; Norris, R. M., 1951; Pratt, W. E., 1947; Putnam, W. C., 1938, 1940; Schureman, P., 1936; Shaler, N. S., 1895; Shepard, F. P., 1931, 1932, 1933c, 1936c, 1936g, 1937b, 1938a, 1938f, 1938h, 1940b, 1949b, 1949c, 1949d, 1950g, 1951e, 1952a, 1953; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P. and LaFond, E. C., 1940; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Stetson, H. C., 1939; Shepard, F. P. and Wrath,

W. F., 1937; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Studds, R. F. A., 1951; Thompson, W. O., 1937; Treasher, R. C., 1937; Twenhofel, W. H., 1943, 1946; Uchupi, E., 1954; Upson, J. E., 1949a; Wheeler, G., 1936

Sea Level Changes, Glacial (See also: Sea Level, Sea Level Changes): Alexander, C. S., 1950; Anderson, W., 1939; Bucher, W. H., 1940; Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Cohee, G. V., 1938; Cotton, C. A., 1942, 1944; Davis, W. M., 1932, 1933; Emery, K. O., 1950c, 1952a, 1952b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Gutenberg, B., 1933; Lawson, A. C., 1948; Louderback, G. D., 1941; MacDonald, G. A., 1934; Norris, R. M., 1951; Shaler, N. S., 1895; Shepard, F. P., 1936g, 1937b, 1938a, 1938f; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Stetson, H. C., 1939; Shepard, F. P. and Wrath, W. F., 1937; Uchupi, E., 1954; Upson, J. E., 1949a

Seamounts (See also: Banks, Submarine Mountains): Carsola, A. J., Dietz, R. S. and Russell, R. D., 1949; Carsola, A. J. and Dietz, R. S., 1952; Dietz, R. S., 1947a, 1952a, 1954; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, R. S., Menard, H. W. and Hamilton, E. L., 1952, 1954; Dill, R. F., 1952; Eardley, A. J., 1954; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Natland, M. L., 1948; Emery, K. O. and Shepard, F. P., 1945; Goldberg, E. D., 1954; Handin, J. W., 1949; Hanna, G. D., 1952; Hinds, N. E. A., 1952; Koczy, F. F., 1954; LaFond, E. C., 1949; Landes, K. K., 1952a, 1952b; Lawson, A. C., 1950; Ma, T. Y. H., 1952; Menard, H. W., 1952; Menard, H. W. and Dietz, R. S., 1951; Murray, H. W., 1939; Scripps Institution of Oceanography, 1953e; Shepard, F. P., 1941a, 1947b, 1948c, 1949b, 1949d, 1949e, 1950e, 1951e, 1952a; Shepard, F. P. and Emery, K. O., 1941, 1945; Wooster, W. S., 1951, 1952

Sea or Wave Ripples: Ewing, G. C., 1950b, 1950c

Sea Slicks: Aldrich, L. and Smith, H. G., 1948; Allen, W. E., 1935, 1940b; Alliott, H., 1917 (floating oil); Bates, C. C. and Glenn, A. H., 1948 (damping action); Beach Erosion Board, 1948h; Belcher, E., 1843; Blake, W. P., 1853, 1855, 1856; California Department Public Health, 1951; Davidson, G., 1856, 1859, 1864; Dietz, R. S. and LaFond, E. C., 1950; Dill, R. F., 1949; Ewing, G. C., 1950a, 1950b, 1950c; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Hubbs, C. L. and Rechnizer, A. B., 1952; Imray, J. F., 1870; McEwen, G. F., 1918 (streaks); Nicholls, C. P. L., 1936c; San Diego Regional Water Pollution Control Board, 1952; Scripps Institution of Oceanography, 1952i; Tanner, Z. L., 1892a; Van Dorn, W. G., 1953

Sea Stacks: Blake, W. P., 1856; Carpenter, F. A., 1924; Hinds, N. E. A., 1952; Hoover, J. W., 1932a; Lawson, A. C., 1893a, 1893b, 1894, 1924; MacDonald, G. A., 1934; Paguirigan, F., 1941; Reiche, P., 1937; Richardson, R. W., 1923; Shepard, F. P., 1941a; Shepard, F. P. and Grant, U. S., 1947; Smith, W. D., 1933c; Wanless, H. R., 1950; Wilson, M. E., 1907; Yates, L. G., 1902

Sea Surface Roughness: Scripps Institution of Oceanography, 1952i

Sea Valley - see Rift Valley, Submarine Canyons

Sea Walls - see Engineering

Sea Weed - see Algae

Sedimentary Rocks (See also: Rocks, various types of sedimentary rock): Chesterman, C. W., 1952; Clements, T. and Emery, K. O., 1947; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1947b, 1951; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Shepard, F. P., 1941, 1945; Gorsline, D. S., 1954; Hanna, G. D., 1952; Holzman, J. E., 1950; Shepard, F. P. and Emery, K. O., 1941; Shumway, G. A., 1953; Uchupi, E., 1954

Sedimentation (See also: Accretion, Artificial Beach Nourishment; Continental Shelf, Origin; Continental Slope, Origin; Interstitial Sedimentation; Submarine Canyons, Loss of Sediment into): Anonymous, 1951b; Allen, W. E., 1941d; Ashauer, H., Hollister, J. S. and Reed, R. D., 1936; Atwill, E. R., 1942; Bache, A. D., 1852; Blake, W. P., 1856; Bruff, S. C., 1946; Buffington, E. C., 1951; Butcher, W. S., 1951a; Caldwell, J. M., 1950; California Department of Fish and Game, 1951; Carpenter, E. J. and Storie, R. E., 1929; Congressional Documents, 1880a, 1940e, 1941, 1942a, 1949-1950a, 1953a; Crowell, J. C., 1952; Dapples, E. C., 1942; Davis, W. M., 1932; Darrow, W. E., 1942; Dawson, E. Y., 1951; Dietz, R. S. and Emery, K. O., 1938a; Dietz, R. S. and Menard, H. W., 1951b; Dietz, R. S., Menard, H. W. and Hamilton, E. L., 1954; Dill, R. F., 1952; Diller, J. S., 1901; Elliott, F. E., Tressler, N. L. and Myers, W. H., 1953; Emery, K. O. and Dietz, R. S., 1939; Emery, K. O. and Shepard, F. P., 1945; Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Fox, C. K., 1936; Fox, D. L., 1950; Fox, J. L. C., 1942; Friedman, S. L., 1949; Galliher, E. W., 1935a, 1935b, 1935c; Gilbert, G. K., 1917; Gillette, C. E., 1905; Goldberg, E. D., 1954; Gross, H. E., 1945; Harts, W. W., 1901; Hinde, H. P., 1952; Inman, D. L., 1949, 1950; Johnson, J. W., 1948d; Kenyon, E. C., Jr., 1951; Koczy, F. F., 1954; Kuenen, Ph. H. and Menard, H. W., 1952; Landes, K. K., 1952b; Lawson, A. C., 1894; Lawson, L. M., 1950; Lawton, C. H., 1936; LeConte, J., 1891; Leeds, C. T., 1915, 1936; Leeds, C. T., Vanoni, V. A. and Knapp, R. T., 1934; Louderback, G. D., 1920, 1940, 1951; McEwen, G. F., 1935b, 1940b; McKee, E. D., 1939; Means, T. H., 1928; Miller, R. L., 1954; Morrison, R. L., 1930; Munk, W. H., 1941; Nelson, N. C., 1909, 1910; Page, G. B., 1950; Reagan, J. W., 1915; Revelle, R., 1938, 1939a, 1939b; San Diego Regional Water Pollution Control Board, 1952; Shaler, N. S., 1896; Shepard, F. P., 1939d, 1940a, 1941a, 1949d, 1951e; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Shepard, F. P. and Stetson, H. C., 1939; Smith, W. D., 1933c; Smith, W. S. T., 1900; Spencer, J. W., 1890; Stevenson, R. E., 1954; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnston, E. C., 1914; Sverdrup, H. U., 1938c, 1940g; Sykes, G., 1938; Trask, P. D., 1927a, 1931b, 1932b, 1939; Twenhofel, W. H., 1943; Udden J. A., 1914; U. S. Army Corps of Engineers, 1931; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1950; Vaughan, T. W., 1932b; White, D., 1911; Wood, H. O., 1915; ZoBell, C. E., 1938, 1944

Abyssal: Carsola, A. J. and Dietz, R. S., 1952; Piggot, C. S., 1944; Piggot, C. S. and Urry, W. D., 1942; Revelle, R., 1935; Shepard, F. P., 1937f; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938

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Troster, J. G., 1949; Verrill, G. E., 1930; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953

Continental and Insular Shelves: Anderson, F. M., 1896-1902; Bucher, W. H., 1940; Butcher, W. S., 1951a; Clark, B. L., 1932; Dietz, R. S., 1951, 1952b; Dietz, R. S. and Menard, H. W., 1951b; Emery, K. O., 1952a; Galliher, E. W., 1935b; Gorsline, D. S., 1954; Jeffreys, H., 1934; MacDonald, G. A., 1934; Miller, R. L., 1954; Moore, D. G., 1951; Pardee, J. T., 1934; Shepard, F. P., 1932, 1940c, 1949b, 1949d, 1951a; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P. and Wrath, W. F., 1937 (insular shelf); Smith, W. S. T., 1900; Wrath, W. F., 1936 (insular shelf)

Continental Slope: Dietz, R. S., 1952b; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952

Submarine Canyons: Davis, W. M., 1933; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Fairbanks, H. W., 1897; Norris, R. M., 1951; Phleger, F. P., 1951; Ritter, W. E., 1902; Shepard, F. P., 1933c, 1934b, 1935a, 1936f, 1937b, 1938a, 1938c, 1938f, 1939c, 1941a, 1948b, 1948c, 1949b, 1950a, 1950g, 1951a, 1951d, 1952a; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Smith, W. S. T., 1902; Woodford, A. O., 1951

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Sediment By-Passing - see By-Passing of Sediment

Sediment Color - see Color of Sediment and various colors of sediments

Sediment Masking - see Masking of Sediment

Sediment Reworking - see Reworking of Sediment

Sediment Thickness - see Thickness of Sediment

Sediments: Agassiz, A. and Murray, J., 1902 (description of bottom materials and bottom sediment chartz); Allen, W. E., 1941c; Anderson, C. A., 1950; Andrews, H. L., 1945; Arnold, D. and Arnold, R., 1902; Arnold, J. L., 1928; Bache, A. D., 1856a; Belknap, G. E., 1874a (tables of bottom sediments); Buck, C. D., 1928; Buffington, E. C., 1951; California Department of Public Health, 1951; California Department of Public Works, 1947; Carsola, A. J., 1947; Coe, W. R., 1947; Crooke, R. C., Elvitsky, A. W., et al, 1953; Dana, S. W., 1942; Davis, W. M., 1932; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941c, 1946a; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Tschudy, R. H., 1941; Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Fleming, J. A., Sverdrup, H. U., Ennis, C. C., Seaton, S. L. and Hendrix, W. C., 1945; Ford, J. L. C., 1942; Fox, D. L., 1944a, 1944b, 1950; Fox, D. L., Crane, S. C. and McConnaughey, B. H., 1948; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1949; Fraser, C. McL., 1943 (tables of sediments and rocks); Galliher, E. W., 1933, 1935a, 1935c, 1939; Gilbert, G. K., 1917; Gilbert, J. Y. and Allen, W. E., 1943; Gislén, T., 1943; Grant, U. S. and Shepard, F. P., 1937; Handin, J. W., 1951; Hansen, H. A. and Pemberton, J. R., 1950; Helfand, S., 1927 (bottom sample notations); Hutton, W. E. and ZoBell, C. E., 1949; Kindle, E. M., 1934; Krumbein, W. C., 1942; Lawson, A. C., 1894; Lesser, R. M., 1951; Louderback, G. D., 1921, 1924, 1951; MacGinitie, G. E., 1927, 1935; Mann, A., 1907 (bottom notations); Means, T. H., 1928; Menard, H. W. and Ludwick, J. C., 1951; Michael, E. L. and McEwen, G. F., 1915; Miller, R. L., 1954; Moberg, E. G. and Allen, W. E., 1927; Moberg, E. G., Fleming, R. H., Heusner, K. and Revelle, R., 1937; Munk, W. H., 1941; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Norris, R. M., 1951; Osorio Tafall, B. F., 1943; Pierce, J. W., 1948; Raitt, R. W., 1949; Revelle, R., 1941; Revelle, R. and Shepard, F. P., 1939a, 1939b; Rittenberg, S. C., 1940; Rosenfeld, W. D., 1948; San Diego Regional Water Pollution Control Board, 1952; Saur, J. T. F., Jr., 1950; Scheffauer, F. C., 1927; Shepard, F. P., 1938b, 1941a, 1950e; Sherzer, W. H., 1910; Smith, P. V., Jr., 1954; Smith, W. D., 1933c; Soper, E. K., 1938; Storie, R. E. and Carpenter, E. J., 1929; Studds, R. F. A., 1951; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnson, E. C., 1914; Sverdrup, H. U., 1939a, 1940e, 1940f, 1940g; Sverdrup, H. U. and Staff, 1941; Tanner, Z. L., 1892a (tables listing sediments), 1893 (tables listing sediments), 1894; Thayer, L. A., 1937; Townsend, C. H., 1901 (tables listing dredging); Trask, P. D., 1927a, 1927b, 1931a, 1932a, 1932b, 1934, 1937a, 1939, 1950; Trask, P. D. and Hammar, H. E., 1931; Trask, P. D. and Rolston, J. W., 1950b; Trask, P. D. and Wu, C. C., 1930a; Udden, J. A., 1914; Updegraff, D. M., 1948; Urry, W. D., 1940; U. S. Commission of Fish and Fisheries, 1898 (tables listing sediments); U. S. Bureau of Fisheries, 1906 (tables listing dredging, 1921 (tables listing dredging; U. S. Hydrographic Office, 1934b, 1947b; Vaughan, T. W., 1932b, 1933; Vaughan, T. W. and Others, 1937; ZoBell, C. E., 1936, 1939, 1944, 1946b, 1946-1947, 1947b, 1947c, 1947d, 1949, 1950; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E. snd Feltham, C. B., 1934b; ZoBell, C. E. and Grant, C. W. and Haas, H. F., 1943

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L. E. and Takasaki, K. L., 1950; Ludwick, J. C., Jr., 1950; Moberg, E. G., Fleming, R. H., Heusner, K and Revelle, R., 1937; Phleger, F. B., 1951; Raitt, R. W., 1949; Revelle, R., 1939b; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1940a, 1941a, 1947b, 1948c, 1951b, 1951d; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Trask, P. D., 1931a, 1931b; Weeks, L. G., 1952; ZoBell, C. E., 1944

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Sediment Transport - see Transport of Sediment

Sediment Trap (See also: Submarine Canyons, Loss of Sediment into): Beach Erosion Board, 1952b; Lapsley, W. W., 1937; McEwen, G. F. and Staff, 1948; Shepard, F. P., 1938b, 1949b, 1949d, 1951a; Shepard, F. P. and Emery, K. O., 1941

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Selective Transportation - see By-Passing of Sediment, Non-Deposition, Winnowing

Serpintine (See also: Igneous Rock, Rock): Cohee, G. V., 1938; Emery, K. O., 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952

Sewage - see Pollution

Shale (See also: Rock, Sedimentary Rock): Anonymous, 1950d; Butcher, W. S., 1951a; California, University of, 1953a, 1953b; Cohee, G. V., 1938; Congressional Documents, 1940e; Coxe, L. C., 1949; Emery, K. O., 1941a, 1941c, 1946b, 1950d, 1952a, 1952b, 1953b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Natland, M. L., 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Fox, L. S., 1930; Fraser, C. McL., 1943; Gorsline, D. S., 1954; Hanna, G. D., 1952; Hoover-Young San Francisco Bay Bridge Commission, 1930; Johnson, M. W., 1948; Johnson, M. W., Everest, F. A. and Young, R. W., 1947; MacDonald, G. A., 1934; Mills, B., 1932c; Moore, D. G., 1951; Norris, R. M., 1951; Revelle, R., 1939; Schupp, R. D., 1953; Shepard, F. P., 1936f, 1949b, 1949d; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P. and MacDonald, G. A., 1938; Shumway, G. A., 1953; Trask, P. D., 1931a, 1931b, 1939; Uchupi, E., 1954; Vaughan, T. W., 1936; White, D., 1911; Woodford, A. O., 1951; ZoBell, C. E.,

1946b, 1946-1947, 1947b

Shape and Roundness of Gravel, Rock, and Sand (See also: Abrasion of Sediments and Rocks): Anonymous, 1950d; Anderson, G. E., 1926; Beach Erosion Board, 1952a; Boos, M. F., 1940; Butcher, W. S., 1951a; Carsola, A. J. and Dietz, R. S., 1952; Clements, T. and Dana, S. W., 1944; Cohee, G. V., 1938; Dana, S. W., 1942; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Eaton, R., 1951; Emery, K. O., 1941a, 1946b, 1947b, 1948, 1952; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Gale, J. F., 1951; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Rittenberg, S. C., 1952; Emery, K. O. and Shepard, F. P., 1941, 1945; Emery, K. O. and Tschudy, R. H., 1941; Emmonds, S. F. and Merrill, G. P., 1894; Gorsline, D. S., 1954; Griggs, A. B. and Wells, F. G., 1942; Gulliver, F. P., 1896; Hanna, G. D., 1952; Holzman, J. E., 1950; Inman, D. L., 1949, 1950, 1953b; Krumbein, W. C., 1942, 1947; Ludwick, J. C., Jr., 1950; MacDonald, G. A., 1934; Martens, J. H. C., 1939; Mason, M. A., 1942, 1949a; Merriam, P. D., 1949; Moore, D. G., 1951; Norris, R. M., 1951; Revelle, R., 1950; Revelle, R. and Shepard, F. P., 1939b; Schupp, R. D., 1953; Shaler, N. S., 1895; Shepard, F. P., 1940b, 1949b, 1949d, 1949e, 1952a; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937; Sherzer, W. H., 1910; Shumway, G. A., 1953; Sinnott, A., 1941; Smith, W. S. T., 1897; Thompson, W. O., 1934; Twenhofel, W. H , 1946; Uchupi, E., 1954; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953

Shells, Shell Sand etc. (See also: Carbonates, Coquina, Limestone, Marl, Organic Sediments): Anonymous, 1906a; Andrews, H. L., 1945; Arnold, D., 1896; Blake, J., 1868b; California Department of Fish and Game, 1951; California Department of Public Health, 1951; Cohee, G. V., 1938; Crooke, R. C., Elvitsky, A. W., et al, 1953; Dana, S. W., 1942; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1952a, 1952b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Tschudy, R. H., 1941; Everest, F. A., Young, R. W. and Johnson, M. W., 1948; Fox, D. L., 1950; Fraser, C. McL., 1943; Galliher, E. W., 1933, 1935a, 1935c, 1937; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Hoover-Young San Francisco Bay Bridge Commission, 1930; Johnson, M. W., 1948; Lawson, A. C., 1894; Louderback, G. D., 1924, 1940; Lowenstam, H. A., 1954; McKee, E. D., 1953; Norris, R. M., 1951; Packard, E. L., 1918; Putnam, J. A., Bermel, K. J. and Johnson, J. W., 1947; Revelle, R., 1950; Revelle, R. and Emery, K. O., 1951; Revelle, R. and Shepard, F. P., 1939b; San Diego Regional Water Pollution Control Board, 1952; Scheffauer, F. C., 1927; Schupp, R. D., 1953; Sears, C. B., 1876; Shepard, F. P., 1940d; Shepard, F. P. and Emery, K. O., 1941; Stevenson, R. E., 1954; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnston, E. C., 1914; Trask, P. D., 1931b; Trask, P. D. and Rolston, J. W., 1950a; Vaughan, T. W., 1933

Banks: Butcher, W. S., 1951a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Dietz, R. S., 1950; Shepard, F. P. and Emery, K. O., 1945; Uchupi, E., 1954

Basins: Emery, K. O. and Rittenberg, S. C., 1952

Beach and Nearshore: Anonymous, 1950d; Barrows, A. L., 1913; Bruff, S. C., 1946; Butcher, W. S., 1951a; Coe, W. R., 1945, 1947; Coe, W. R. and Fox, D. L., 1942; Davis, W. M., 1932; Emery, K. O., 1945a, 1945b, 1946b; Emery, K. O. and Gale, J. F., 1951; Emery, K. O. and Stevenson, R. E., 1950; Hanna, G. D., 1952; Lakes, A., 1903a; McKee, E. D., 1953; Martens, J. H. C., 1939; Norris, R. M., 1951, 1952; Putnam, W. C., 1938; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Thompson, W. O., 1937

Coastal Sand Dunes: Merriam, P. D., 1949; Olsson-Seffer, P., 1910a

Continental and Insular Shelves: Crooke, R. C., Elvitsky, A. W., et al, 1953; Davidson, G., 1897; Emery, K. O., 1952a; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Gorsline, D. S., 1954; Inman, D. L., 1950; Moore, D. G., 1951; Norris, R. M., 1951; Pardee, J. T., 1934; Shepard, F. P., 1932, 1941a, 1949b; Shepard, F. P. and Wrath, W. F., 1937

Continental Slope: Hanna, G. D., 1952; Udden, J. A., 1914

Submarine Canyons: Crowell, J. C., 1952; Davidson, G., 1887, 1897; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Norris, R. M., 1951; Phleger, F. B., 1951; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1932, 1951d

Shells, Siliceous (See also: Diatoms and other Siliceous Organisms): Goldberg, E. D., 1954

Shingle Beach - see Cobble Beach

Shoreline: Anonymous, 1932c, 1938a, 1940b, 1940d; Anderson, F. M., 1896-1902; Bartlett, W. A., 1852; Beach Erosion Board, 1939, 1948a, 1948h, 1948i; Berghaus, H., 1891; Blake, W. P., 1856; Bowers, S., 1890; Brown, E. I., 1939; Bruff, S. C., 1946; Burt, W. V. and Saur, J. F. T., Jr., 1948; Buwalda, J., 1936, 1948; Congressional Documents, 1953b; Cotton, C. A., 1942; Davidson, G., 1856, 1897; Davis, W. M., 1931, 1932; Diller, J. S., 1915; Emmonds, S. F. and Merrill, G. P., 1894; Fairbanks, H. W., 1904; Goldberg, J., 1940; Greenwell, W. E., 1858; Harts, W. W., 1911; Hinds, N. E. A., 1952; Hoover, J. W., 1932a; Inman, D. L., 1953a; Johnson, A. G., 1935; Jones, E. L., 1918; LaFond, E. C., 1939a (shoreline changes); Lawson, A. C., 1914, 1924; Leeds, C. T., 1936; Leypoldt, H., 1941b, 1942; Livingston, A., Jr., 1939; Louderback, G. D., 1919; Lucke, J. B., 1938; McLaughlin, R. P., 1921; MacDonald, G. A., Shepard, F. P. and Cox, D. C., 1947; Marlette, J. W., 1954; Maxson, J. H., 1931, 1932; Morgan, F. A., 1930; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1936a, 1939, 1941; Putnam, W. C., 1937c, 1938 (shoreline changes); Richardson, R. W., 1923; Sanchez, P. C., 1934a; Sanford, J. J., 1908; Shaler, N. S., 1892; Shalowitz, A. L., 1953; Shepard, F. P., 1938h (classification of shorelines); Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1949; Smith, P. A., 1938 (also classification of shorelines); Smith, W. D., 1930, 1933a (also classification of shorelines), 1940 (classification of shorelines); Smith, W. S. T., 1900; Thompson, W. O., 1937; Twenhofel, W. H., 1943; Upson, J. E., 1949a, 1951; U. S. Coast and Geodetic Survey, 1915; Vickery, F. P., 1927a; Walters, L., 1953; Willis, B., 1900; Wittich, E., 1910

Silicates, Silica (See also: Nutrients): Anonymous, 1954m; Ahlstrom, E. H., 1950; Atwill, E. R., 1941b, 1942; Bigelow, H. B. and Leslie, M., 1930; Brongersma-Sanders, M., 1948; Bullock, F. W., 1933; Chesterman, C. W., 1952; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Fleming, J. A., Sverdrup, H. U., Ennis, C. C., Seaton, S. L. and Hendrix, W. C., 1945; Fleming, R. H., 1939a; Ford, J. L. C., 1942; Gislén, T., 1943, 1944; Goldberg, E. D., 1954; Graham, H. W., 1934; Graham, H. W. and Moberg, E. G., 1944; Hewatt, W. G., 1934; Leslie, M., 1928; Lipman, C. B., 1929; McEwen, G. F., 1934a; Michael, E. L., 1921; Moberg, E. G., 1925, 1930c; Moberg, E. G. and Fleming, R. H., 1934; Moberg, E. G. and Harding, H. W., 1933; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Phelps, A., 1937, 1940; Piggot, C. S., 1932, 1944; Revelle, R., 1935, 1937a, 1937b, 1950; Revelle, R. and Emery, K. O., 1951; Scripps Institution of Oceanography, 1953e; Skogsberg, T., 1936; Skogsberg, T. and Phelps, A., 1946; Smith, P. V., Jr., 1954; Stanton, T. E., Jr., 1938; Sverdrup, H. U., 1940g; Sverdrup, H. U. and Staff, 1941;

Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Vaughan, T. W., 1930b, 1930d, 1932a, 1932c, 1933, 1940; ZoBell, C. E., 1941; ZoBell, C. E., Grant, C. W. and Haas, H. F., 1943

Siliceous Ooze - see Ooze, General

Siliceous Shells - see Shells, Siliceous

Sill of Basins, Banks, Canyons etc.: Atwill, E. R., 1942 (in bay and lagoon): Congressional Documents, 1953b; Crouch, R. W., 1951; Dapples, E. C., 1943; Dawson, E. Y., 1952 (lagoon); Dietz, R. S., 1938; Emery, K. O., 1953a, 1954d; Emery, K. O. and Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Rittenberg, S. C., 1952; Garrison, L. E. and Takasaki, K. L., 1950; Handin, J. W., 1949; Hoots, H. W., 1943; Kuenen, Ph. H., 1947; Lawson, A. C., 1924; Natland, M. L., Revelle, R. and Rittenberg, S. C., 1941; Revelle, R., 1939a, 1950; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1948c, 1950d, 1950e, 1952a; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Sverdrup, H. U., 1940d; Vaughan, T. W., 1940; Woodford, A. O., 1951

Silt: Atwill, E. R., 1942 (silting in bay and lagoon); Beach Erosion Board, 1952b; Butcher, W. S., 1951a; Crooke, R. C., Elvitsky, A. W., et al, 1953; Congressional Documents, 1940e, 1942; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Elliott, F. E., Tressler, W. L. and Myers, W. H., 1953; Emery, K. O., 1950d; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Natland, M. L., 1952; Ford, J. L. C., 1942; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Fries, A. A., 1912; Galliher, E. W., 1935a, 1935c; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Hanna, M. A., 1926; Inman, D. L., 1949, 1950; Lawson, A. C., 1914; Leeds, C. T., 1915; Louderback, G. D., 1940; McEwen, G. F., 1940b; McKee, E. D., 1953; Martin, L. T., 1935; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Piggot, C. S. and Urry, W. D., 1942; Revelle, R., 1938, 1939a, 1950; Revelle, R. and Emery, K. O., 1951; Revelle, R. and Shepard, F. P., 1939b; Schupp, R. D., 1953; Shepard, F. P., 1949d; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Stevenson, R. E., 1954; Sverdrup, H. U., 1939a; Trask, P. D., 1928, 1931a, 1931b, 1934, 1939, 1950; Trask, P. D. and Rolston, J. W., 1950a, 1950b; Udden, J. A., 1914; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1950; Varney, F. M. and Redwine, L. E., 1937; White, D., 1911; ZoBell, C. E., 1938, 1943, 1947c; ZoBell, C. E. and Feltham, C. B., 1942; ZoBell, C. E., Grant, C. W. and Haas, H. F., 1943

Abyssal: Revelle, R., 1935; Shepard, F. P., 1950a; Urry, W. D. and Piggot, C. S., 1942

Bank: Butcher, W. S., 1951a; Emery, K. O., 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Shepard, F. P. and Emery, K. O., 1945; Uchupi, E., 1954

Basin: Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Rittenberg, S. C., 1951, 1952; Garrison, L. E. and Takasaki, K. L., 1950; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Ludwick, J. C., Jr., 1950; Revelle, R., 1939b; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1939d, 1940a, 1941a, 1951d; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Trask, P. D., 1931b

Beach and Nearshore: Emery, K. O. and Foster, J. F., 1948; Grant, U. S. and Shepard, F. P., 1940; Purer, E. A., 1942; Shepard, F. P., 1950c; Stevenson, R. E., 1954; Thompson, W. O., 1937; Vaughan, T. W., 1940

Coastal Sand Dunes: Congressional Documents, 1953b

Continental Shelf: Cohee, G. V., 1938; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O. and Gould, H., 1948; Galliher, E. W., 1935b; Garrison, L. E. and Takasaki, K. L., 1950; Gorsline, D. S., 1954; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Handin, J. W., 1949; Inman, D. L., 1950; MacDonald, G. A., 1934; Moore, D. G., 1951; Pardee, J. T., 1934; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1932, 1939b, 1949b, 1949d; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937

Continental Slope: Shepard, F. P., 1932

Submarine Canyons: Cohee, G. V., 1938; Congressional Documents, 1953b; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Handin, J. W., 1949; Inman, D. L., 1950; Ludwick, J. C., Jr., 1950; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1932, 1933c, 1948b, 1950a, 1950d, 1951a; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Shepard, F. P. and Wrath, W. F., 1937; Toit, A. L. du, 1940

Siltstone (See also: Rock, Sedimentary Rock): Chesterman, C. W., 1952; Cohee, G. V., 1938; Gorsline, D. S., 1954; Hanna, G. D., 1951, 1952; Moore, D. G., 1951; Shumway, G. A., 1953; Uchupi, E., 1954

Silver: Piggot, C. S., 1932, 1944; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Vaughan, T. W., 1933

Skewness: Dapples, E. C., 1942; Emery, K. O. and Gould, H. R., 1948; Garrison, L. E. and Takasaki, K. L., 1950; Inman, D. L., 1950; Scripps Institution of Oceanography, 1953c; Trask, P. D., 1932a

Abyssal: Emery, K. O., 1954b

Bank: Emery, K. O., 1954b; Holzman, J. E., 1950

Basin: Emery, K. O., 1954b; Ludwick, J. C., Jr., 1950 (sorting vs. skewness; medium diameter vs. skewness)

Beach and Nearshore: Beach Erosion Board, 1953c, 1954b; Emery, K. O., 1954b; Inman, D. L., 1949, 1950, 1953b; Keller, W. D., 1941; Sinnott, A., 1941; Trask, P. D., 1952a; Trask, P. D. and Scott, T., 1954; Twenhofel, W. H., 1946

Coastal Sand Dunes: Emery, K. O., 1954b; Keller, W. D., 1941; Sinnott, A., 1941; Twenhofel, W. H., 1946

Continental Shelf: Dill, R. F., 1952; Emery, K. O., 1954b; Inman, D. L., 1950; MacDonald, G. A., 1934; Miller, R. L., 1954; Moore, D. G., 1951

Continental Slope: Dill, R. F., 1952; Emery, K. O., 1954b

Submarine Canyons: Cohee, G. V., 1938

Slack Water - see Pollution, Reducing or Anaerobic Environment, Stagnant Water

Slate (See also: Metamorphic Rock, Rock): Cohee, G. V., 1938; Emery, K. O. and Shepard, F. P., 1945; Shepard, F. P. and MacDonald, G. A., 1938

Slope - see Beach and Nearshore, Continental Shelf, Continental Slope, Submarine Canyons

Slopes - see Escarpment

Slough - see Swamp

Slumping - see Submarine Canyons, Origin of; Submarine Slumping

Snapper Samples (See also: Cores and Coring, Dredging): Butcher, W. S., 1951a; Carsola, A. J., Dietz, R. S., 1952; Carsola, A. J., Dietz, R. S. and Russell, R. D., 1949; Crouch, R. W., 1954; Dietz, R. S., 1954; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1947b, 1948; Emery, K. O. and Dietz, R. S., 1950; Emery, K. O. and Gould, H., 1948; Emery, K. O. and Shepard, F. P., 1945; Garrison, L. E. and Takasaki, K. L., 1950; Holzman, J. E., 1950; Moore, D. G., 1951; Revelle, R., 1950; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1950e; Shepard, F. P. and Emery, K. O., 1941; Sverdrup, H. U. and Staff, 1941; Trask, P. D., 1931b; Uchupi, E., 1954

Sodium: Galliher, E. W., 1935a; Kelley, W. P. and Liebig, G. F., Jr., 1934; Lipman, C. B., 1929; McEwen, G. F., 1934a; McKee, E. D., 1953; Revelle, R., 1935, 1941; Revelle, R. and Emery, K. O., 1951; Stanton, T. E., Jr., 1938; Sverdrup, H. U. and Staff, 1942a (Na_2CO_3); Thompson, T. G. and Robinson, R. J., 1932; Vaughan, T. W., 1940; Veach, J. A., 1859

Solution, Resolution, Desolving of Rocks, Sediments etc. (Also see: Regeneration): Allen, W. E., 1941a (solution and decomposition of dinoflagellates);

Emery, K. O., 1941b, 1946b; Emery, K. O. and Rittenberg, S. C., 1952; Sverdrup, H. U., 1940g; Williams, W., 1948

Sollution Basins (See also: Minor Features, Rocky Coasts; Tide Pools): Emery, K. O., 1946b; Williams, W., 1948

Sorting (See also: Skewness): California, University of, 1954b; Dana, S. W., 1942; Emery, K. O., 1950d, 1954b; Emery, K. O. and Dietz, R. S., 1941; Emery, K. O. and Gould, H. R., 1948; Emery, K. O., Tschudy, R. H., 1941; Galliher, E. W., 1935c; Garrison, L. E. and Takasaki, K. L., 1950; Inman, D. L., 1950; Kuenen, Ph. H. and Menard, H. W., 1952; Lesser, R. M., 1951; Louderback, G. D., 1920, 1940; McKee, E. D., 1953; Menard, H. W., 1952; Norris, R. M., 1951; Revelle, R., 1935, 1939; Revelle, R. and Shepard, F. P., 1939b; Scripps Institution of Oceanography, 1953c; Stevenson, R. E., 1954; Trask, P. D., 1931b, 1932a; Udden, J. A., 1914; ZoBell, C. E., 1938

Abyssal: Emery, K. O., 1954b; Revelle, R., 1935;

Bank: Emery, K. O., 1954b; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Holzman, J. E., 1950; Uchupi, E., 1954

Basin: Emery, K. O., 1954b; Emery, K. O. and Rittenberg, S. C., 1952; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Ludwick, J. C., Jr., 1950 (sorting vs. skewness) (sorting vs. medium diameter); Shepard, F. P., 1951d; Trask, P. D., 1931b

Beach and Nearshore: Bascom, W. N., 1950c; Beach Erosion Board, 1948i, 1953c, 1954b; Bullard, F. M. and Mills, R. A., 1951; California, University of, 1952a; Dietz, R. S., 1947b; Emery, K. O., 1946b, 1954b, 1954c (gravel); Emery, K. O. and Foster, J. F., 1948; Emery, K. O. and Stevenson, R. E., 1950; Hall, J. V., Jr., 1952; Handin, J. W., 1949; Handin, J. W. and Ludwick, J. C., 1949; Inman, D. L., 1949, 1950, 1953a, 1953b; Isaacs, J. D. and Bascom, W. N., 1947; Keller, W. D., 1941; Krumbein, W. C., 1947, 1950; Lang, H., 1916; McKee, E. D., 1953; Marlette, J. W., 1954; Martens, J. H. C., 1939; Mason, M. A., 1942; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951; Olsson-Seffer, P., 1910a; Pardee, J. T., 1934; Schupp, R. D., 1953; Shepard, F. P., 1936a; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Sherzer, W. H., 1910; Shuler, W. R., 1951; Sinnott, A., 1941; Thompson, W. O., 1937; Trask, P. D., 1924, 1952a; Trask, P. D. and Scott, T., 1954 (also sorting vs. medium diameter); Twenhofel, W. H., 1946; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953; Woodford, A. O., 1935

Coastal Sand Dunes: Emery, K. O., 1954b; Gorsline, D. S., 1954; Handin, J. W., 1949; Keller, W. D., 1941; Merriam, P. D., 1949; Olsson-Seffer, P., 1910a; Sinnott, A., 1941; Thompson, W. O., 1937; Twenhofel, W. H., 1946

Continental and Insular Shelves: Dill, R. F., 1952; Emery, K. O., 1954b; Gorsline, D. S., 1954; Inman, D. L., 1950; MacDonald, G. A., 1934; Marlette, J. W., 1954; Moore, D. G., 1951; Norris, R. M., 1951; Shepard, F. P., 1940c, 1941a, (insular), 1941b; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937 (insular); Udden, J. A., 1914

Continental Slope: Dill, R. F., 1952; Emery, K. O., 1954b

Submarine Canyons: Cohee, G. V., 1938; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Inman, D. L., 1950; Ludwick, J. C., 1950; Marlette, J. W., 1954; Phleger, F. B., 1951; Shepard, F. P., 1948b, 1951d

Sound (See also: Geophysics and Geophysical Surveys): Anderson, E. R., 1950; Boden, B. P., 1950; California Academy of Sciences, California Division of Fish and Game, Scripps Institution of Oceanography of the University of California, and U. S. Fish and Wildlife Service, 1951a; California, University of, 1942, 1943, 1946a, 1946b, 1946c; Crooke, R. C., Elvitsky, A. W. et al, 1953; Dietz, R. S., 1948, 1952a; Dyk, K. and Swainson, W. O., 1953; Ennis, C. C., 1934; Everest, F. A., Young, R. W. and Johnson, M. W., 1948; Fish, M. P., 1949; Fleming, J. A. and Sverdrup, H. U., Ennis, C. C., Seaton, S. L. and Hendrix, W. C., 1945; Heck, N. H. and Service, J., 1926; Holtsmark, B. E., 1949; Johnson, M. W., 1948; Johnson, M. W., Everest, F. A. and Young, R. W., 1947; Knox, R. W., 1930; Knudsen, V. O., Alford, R. S. and Emling, J. W., 1948; LaFond, E. C., 1949; Marshall, N. B., 1951; Menard, H. W. and Dietz, R. S., 1951; Munk, W. H., 1947a; Patton, R. S., 1930; Raitt, R. W., 1948, 1954; Revelle, R., 1943; Rude, G. T., 1933, 1934; Saur, J. T. F., Jr., 1950; Scripps Institution of Oceanography, 1952h, 1953b, 1953g; Shepard, F. P., 1950e; Soule, F. M., 1934, 1944a; Swainson, O. W., 1936; Swainson, O. W., McIlwraith, C. G. and Dyk, K., 1934; Tucker, G. H., 1951; Walford, L. A., 1951

Source Beds for Petroleum (See also: Petroleum, Origin of); Anderson, R., 1927; Branner, J. C., 1913; Gester, G. C., 1927; Trask, P. D., 1930, 1931b, 1934, 1936; Trask, P. D., Hammar, H. E. and Wu, C. C., 1932; Trask, P. D. and Patnode, H. W., 1942; ZoBell, C. E., 1943, 1944

Source Rocks (See also: Bedrock, Transport of Rock): Uchupi, E., 1954

Source Sediments: Butcher, W. S., 1951a; Buwalda, J. P., 1948; Crowell, J. C., 1952; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Rittenberg, S. C., 1952; Gilbert, G. K., 1917; Ludwick, J. C., Jr., 1950; Morrison, R. L., 1930; Phleger, F. B., 1951; Revelle, R., 1937a; Revelle, R. and Shepard, F. P., 1939b; Scripps Institution of Oceanography, 1953e; Shepard, F. P., 1937f, 1951d; Stevenson, R. E., 1954; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1950

Abyssal: Goldberg, E. D., 1954; Revelle, R., 1936, 1944

Beach and Nearshore: Anonymous, 1938a, 1940d; Beach Erosion Board, 1939, 1948a, 1948h, 1948i, 1949a, 1952a, 1952b, 1953c, 1954a; Blackman, J. W. B., 1936; Brown, C. B., 1942; Brown, E. I., 1939; Buwalda, J., 1936; California, University of, 1952a, 1952b, 1952c, 1952d, 1953a, 1953b; Congressional Documents, 1938a, 1940a, 1942b, 1949f, 1953b; Crowell, J. C., 1952; Darrow, W. E., 1942; Eaton, R. O., 1951; Einstein, H. A., 1951; Goldberg, J., 1940; Gorsline, D. S., 1954; Grant, U. S. and Shepard, F. P., 1937, 1938b; Griffin, D. F., 1944; Griggs, A. B. and Wells, F. G., 1942; Hall, W. C., 1942; Handin, J. W., 1949, 1951; Handin, J. W. and Ludwick, J. C., 1949; Hannum, W. T., 1947; Harts, W. W., 1911; Hornor, R. R., 1918; Horton, D. F., 1948; Inman, D. L., 1949, 1953a, 1953b; Johnson, A. G., 1940c; Krumbein, W. C., 1947, 1950; Krumbein, W. C. and Ohsiek, L. E., 1950; Lang, H., 1916; Leeds, C. T., 1916, 1936; Leypoldt, H., 1941a; Lindsay, D. R., 1952; Livingston, A., Jr., 1939; Los Angeles County Regional Planning Commission, 1940; McAfee, C. M., Jr., 1939; Mason, M. A., 1942, 1949a, 1950a; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951; O'Brien, M. P., 1936a, 1936b, 1939; Page, G. B., 1950; Pardee, J. T., 1934; Schupp, R. D., 1953; Shepard, F. P., 1947b, 1950c, 1950g; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Schuler, W. R., 1951, 1952; Sinnott, A., 1941; Symons, T. W., 1893; Thompson, W. O., 1937; Tower, M. L., 1910; Trask, P. D., 1952b; Twenhofel, W. H., 1943, 1946; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953

Coastal Sand Dunes: Blake, W. P., 1853; Diller, J. S., 1898; Gorsline, D. S., 1954; Livingston, A., Jr., 1939; Olsson-Seffer, P., 1910a

Source Water of Basins: Emery, K. O., 1954d

Specific Gravity (water except where noted): Anonymous, 1938a and 1940d (sediment); Allen, W. E., 1923b; Beach Erosion Board, 1942a (sediment); Congressional Documents, 1938a and 1940a (sediment); Lipman, C. B., 1929; McEwen, G. F., 1919a; Michael, E L. and McEwen, G. F., 1915, 1916; Revelle, R. and Emery, K. O., 1951 (sediment); Schulz, B., 1914;

Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnston, E. C., 1914; Tanner, Z. L., 1892a, 1893; U. S. Commission of Fish and Fisheries, 1898
Specific Volume: Montgomery, R. B. and Wooster, W. S., 1954
Sphericity - see Shape and Roundness
Spiculite (See also: Rock): Emery, K. O. and Shepard, F. P., 1945
Spit: Arnold, J. J., 1928; Atwill, E. R., 1942; Bruff, S. C., 1946; Buwalda, J., 1936; Congressional Documents, 1908e, 1938c, 1941, 1949d; Davidson, G., 1873c; Davis, W. M., 1932; Dietz, R. S., 1947b; Grant, U. S., 1938, 1940, 1944; Grant, U. S. and Shepard, W. E., 1939; Gulliver, F. P., 1896; Handin, J. W., 1949, 1951; Hanna, M. A., 1926; Harris, F. R. and Harlow, E. H., 1948; Harts, W. W., 1901, 1911; Hawgood, H., 1914; Hinds, N. E. A., 1952; Inman, D. L., 1949; Isaacs, J. D., 1945d; Isaacs, J. D. and Bascom, W. N., 1947; Johnson, A. G., 1940c; Kemnitzer, L. E., 1933; Kniffen, F. B., 1932; Krumbein, W. C. and Ohsiek, L. E., 1950; Leeds, C. T., 1936; Leeds, C. T., Vanoni, V. A. and Knapp, R. T., 1934; Leypoldt, H., 1941b; Livingston, A., Jr., 1939; Mendenhall, W. C., 1905; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951, 1952; Olsson-Seffer, P., 1910a; Orange County Planning Commission, 1941; Pardee, J. T., 1934; Pease, W. H., 1868; Purer, E. A., 1942; Richardson, R. W., 1923; Shepard, F. P., 1950c, 1952b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1951a; Smith, W. D., 1933b, 1933c; Stevenson, R. E., 1954; Storie, R. E. and Carpenter, E. J., 1930; Thompson, W. O., 1937; Tower, M. L., 1910, 1913; Whittemore, G. F., 1916, 1917, 1926
"Sporbo" (Also see: Iron Sulfides, Pyrite): Galliher, E. W., 1932b
Spout Holes - see Minor Features, Rocky Coasts
Springs - see Submarine Oil and Gas Seeps, Submarine Springs
Stability - see Equilibrium
Stagnant Water, Stagnant or Toxic Conditions, Slack Water (See also: Eh, Hydrogen Sulfide, Pollution, Reducing or Anaerobic Environment, various factors bringing about stagnant conditions, i.e. bacteria etc.): Allen, W. E., 1945; Bullock, F. W., 1933; California Department of Public Health, 1951; Dall, W. H., 1911; Dapples, E. C., 1942; Dietz, R. S., 1952a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1952b, 1953a, 1954d; Emery, K. O. and Rittenberg, S. C., 1952; Evans, R. D., Kip, A. F. and Moberg, E. G., 1938; Fox, D. L., Updegraff, D. M. and Novelli, G. D., 1944; Hall, J. V., Jr., 1952; Hoots, H. W., 1943; Krumbein, W. C., 1942; McEwen, G. F., 1950; Moberg, E. G. and Allen, W. E., 1927; Moore, D. G., 1951; Morrison, R. L., 1930; Revelle, R. and Shepard, F. P., 1939b; San Diego Regional Water Pollution Control Board, 1952; Sverdrup, H. U., 1940g; Thompson, T. G. and Robinson, R. J., 1932; Trask, P. D., 1939; Weber, B. V., 1946; Weeks, L. G., 1952; White, D., 1911; ZoBell, C. E., 1936, 1937, 1938, 1939, 1941, 1942b, 1943, 1944, 1947c, 1947d, 1950; ZoBell, C. E. and Anderson, D. Q., 1936; ZoBell, C. E., Grant, C. W. and Haas, H. F., 1943
Standard Deviation (See also: Skewness): Scripps Institution of Oceanography, 1953c
Stone Lace - see Minor Features, Rocky Coasts
Storms (See also: Meteorology and Climate): Anonymous, 1894a, 1915, 1916a, 1916b, 1916d, 1925b, 1938a, 1940b, 1940c, 1940d, 1941b, 1951d, 1952f; Ahlstrom, E. H., 1950; Allen, W. B., 1932; Allison, J. M., 1940; Andrews, H. L., 1945; Army Air Forces, Weather Information Branch, 1943; Bache, A. D., 1856e, 1862; Bascom, W. N., 1946b, 1947c, 1950b, 1950c; Bates, C. C. and Glenn, A. H., 1948; Beach Erosion Board, 1942a, 1948b, 1948h, 1951, 1952b, 1953a, 1953c; Beals, E. A., 1919; Bell, W. E., Bassler, F. F., Buck, F. E., Murphy, D. E., Writt, J. J. and Beauchamp, E. E., 1944; Blake, D., 1935; Blinn, F. S., 1928; Bond, A. H., 1927; Brown, E. I., 1939; Brown, S. C., 1946; Bucher, W. H., 1940; California, University of, 1952a, 1952b, 1952c; Campbell, M. R., 1915; Chase, J. L., 1948; Congressional Documents, 1880c, 1908e, 1938a, 1940a, 1940b, 1940c, 1941, 1942b, 1943, 1949b, 1949c, 1949d, 1949-1950b, 1949f, 1953a, 1953b; Cram, C. M., 1931; Crooke, R. C., Elvitsky, A. W., et al, 1953; Darrow, W. E., 1942; Datz, M. and Others, 1953; Davis, W. M., 1932, 1933, 1934; Deacon, G. E. R., 1949; Donn, W. L., 1954; Dunkle, M. B., 1944; Eaton, R. O., 1951; Emery, K. O., 1948, 1953b; Emery, K. O. and Foster, J. F., 1948; Emery, K. O. and Tschudy, R. H., 1941; Fisher, R. L. and Mills, R., 1952; Friedman, S. L., 1949; Fries, A. A., 1912; Gaillard, D. D., 1904; Gilbert, G. K., 1917; Goldberg, J., 1940; Gorton, A. F., 1930a, 1930b; Grant, U. S., 1938; Grant, U. S. and Shepard, F. P., 1937, 1938a, 1938b, 1940; Gulliver, F. P., 1896; Gutenberg, B., 1933, 1953; Haase, L. G., 1926; Hall, J. V., Jr., 1952; Hall, W. C., 1941, 1942; Handin, J. W., 1949; Harts, W. W., 1901, 1911; Hickson, R. E. and Rodolf, F. W., 1951; Hoover-Young San Francisco Bay Bridge Commission, 1930; Horrer, P. L., 1948b, 1950; Hughes, R. T., 1947; Hurd, W. E., 1942; Inman, D. L., 1949, 1953a, 1953b; Isaacs, J. D. and Bascom, W. N., 1947; Isaacs, J. D. and Saville, T., Jr., 1948; Johnson, A. G., 1935, 1940c, 1951; Johnson, D. W., 1910; Johnson, J. W., 1948b, 1949; Johnson, J. W. and Isaacs, J. D., 1948; Jones, E. L., 1918; Kaplan, K. and Pape, H. E., Jr., 1951; Kemnitzer, L. E., 1933; Kniffen, F. B., 1932 (in Gulf of California); Krumbein, W. C., 1947, 1950; Kuenen, Ph. H., 1947; Kuenen, Ph. H. and Menard, H. W., 1952; Lang, H., 1916; Lawton, C. H., 1936; Leeds, C. T., 1915, 1916, 1936; Leypoldt, H., 1937b, 1941a; Lieber, A. C., Jr., 1940; Los Angeles County Regional Planning Commission, 1940; Livingston, A., Jr., 1939; Lowell, F. L. L., 1915a; McEwen, G. F., 1935a, 1935b; McEwen, G. F. and Staff, 1948; McGee, W. J., 1900; McGowan, W. C., 1916; McKee, E. D., 1953; McOuat, H. W., 1951; MacDonald, G. A., 1934; Marlette, J. W., 1954; Mason, M. A., 1942, 1949b, 1950a, 1950b; Means, T. H., 1929; Moffitt, J. and Orr, R. T., 1938; Morrison, R. L., 1930 (estuary); Munk, W. H., 1952; Munk, W. H. and Arthur, R. S., 1952; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; O'Brien, M. P., 1936a, 1936b, 1939, 1941, 1947b; Olsson-Seffer, P., 1910a; Orange County Planning Commission, 1941; Page, G. B., 1950; Palmer, A. H., 1917; Pardee, J. T., 1934; P'ei, C., 1929; Purer, E. A., 1942; Putnam, J. A., 1947; Putnam, W. C., 1940; Rawn, A. M. and Bowerman, F. R., 1951; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Rolland, M. C., 1952; Rosser, W. H., 1870; Sanchez, P. C., 1934e; Sanford, J. J., 1908; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1944c, 1944h, 1945b, 1952i; Sears, C. B., 1876; Shepard, F. P., 1935d, 1936f, 1938b, 1938c, 1938f, 1940c, 1941a, 1947b, 1950c, 1950g; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P. and Grant, U. S., 1947; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P. and LaFond, E. C., 1940; Shepard, F. P. and Sayner, D. B., 1953; Shepard, F. P. and Wrath, W. F., 1937; Shipmasters and Others, 1879; Shuler, W. R., 1951, 1952; Sinnott, A., 1941; Skeats, E. M., 1923; Smith, C. D., Jr., 1950; Smith, W. D., 1933a; Stevenson, R. E., 1954; Stump, R. S., 1946a, 1946c; Stump, R. S. and Hermanson, R. T., 1945b; Sverdrup, H. U. and Staff, 1941, 1942a; Swinnerton, A. C., 1927; Symons, T. W., 1893; Sweeney, J., 1930; Tanner, Z. L., 1892b; Thompson, W. O., 1937; Tilden, C. A., 1925; Todd, D. K. and Wiegel, R. L., 1951, 1952; Tower, M. L., 1910; Trask, P. D., 1952a; Troxell, H. C. and Others, 1942; U. S. Hydrographic Office, 1875; Vaughan, T. W., 1940; Verrill, G. E., 1940; Whitney, P. C., 1935; Whittemore, G. F., 1916, 1928; Wiegel, R. L. and Kimberley, H. L., 1950; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953; Wiegel, R. L., Todd, D. K. and Kimberley, H. L., 1950; Yale, C. G., 1879; Yates, L. G., 1890c
Stratification - see Lamination
Stratification, Water: California, University of, 1946a; Leipper, D. F., 1950; Menard, H. W. and Ludwick,

J. C., 1951 (density stratification); Natland, M. L., Revelle, R. and Rittenberg, S. C., 1949 (density stratification); Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P. and Emery, K. O., 1941; Sverdrup, H. U., 1934; Sverdrup, H. U. and Staff, 1941 (density stratification); Young, R. T., Jr., 1939 (density stratification)

Streams, Rivers: Anonymous, 1933a, 1933b, 1938a, 1940b, 1940d, 1951b; Allen, W. E., 1920, 1941a; Anderson, C. A., 1950; Arnold, J. L., 1928; Ashley, G. H., 1931; Bache, A. D., 1852, 1862; Barrows, A. L., 1917; Beach Erosion Board, 1939, 1948b, 1948h, 1948i, 1949a, 1952b, 1953a, 1953c, 1954a, 1954c; Benest, H., 1899; Blackman, J. W. B., 1936; Blake, J., 1868b; Blinn, F. S., 1928; Boos, M. F., 1940; Bruff, S. C., 1940, 1946; Bullard, F. M. and Mills, R. A., 1951; Butcher, W. S., 1951a; Buwalda, J., 1936; California Department of Public Works, 1932a, 1932b; California, University of, 1952b, 1952c; Carpenter, E. J. and Storie, R. E., 1929; Cartwright, L. D., Jr., 1928; Clements, T. and Dana, S. W., 1944; Cohee, G. V., 1938; Congressional Documents, 1908f, 1934a, 1936, 1938a, 1938c, 1940a, 1940b, 1940e, 1942a, 1942c, 1949a, 1949e, 1950a, 1953; Copeland, C. A., 1933; Crandall, H., 1915; Crooke, R. C., Elvitsky, A. W., et al, 1953; Crowell, J. C., 1950, 1952; Dall, W. H., 1911; Darrow, W. E., 1942; Davidson, G., 1856, 1873c, 1897; Davis, W. M., 1932, 1933; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., 1952; Diller, J. S., 1903; Eaton, R. O., 1951; Einstein, H. A., 1951; Elliott, F. E., Tressler, W. L. and Myers, W. H., 1953; Emery, K. O., 1950d, 1952a, 1954b, 1954c; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Ewing, G. C., 1950c; Fairbanks, H. W., 1904; Fox, C. K., 1936; Fox, D. L., 1950; Fox, D. L., Isaacs, J. D. and Corcoran, E. F., 1952; Galliher, E. W., 1935a; Gilbert, G. K., 1917; Goldberg, J., 1940; Gordon, J. H., 1923; Grant, U. S., 1940, 1944, 1946; Grant, U. S. and Shepard, F. P., 1937, 1938a, 1938b; Grant, U. S. and Sheppard, W. E., 1939 (stream erosion); Grunsky, C. E., 1907; Gulliver, F. P., 1896; Gutenberg, B., 1941b; Hall, W. C., 1942; Hall, W. H., 1886; Handin, J. W., 1949; Handin, J. W. and Ludwick, J. C., 1949; Hinde, H. P., 1952; Hinds, N. E. A., 1952; Hobbs, W. H., 1921; Holway, R. S., 1914; Horton, D. F., 1948; Hyatt, E., 1935; Inman, D. L., 1949, 1950, 1953a; Isaacs, J. D. and Bascom, W. N., 1947; Ives, R. L., 1951; Jarvis, C. S., 1921; Johnson, A. G., 1940; Johnson, D., 1944; Johnson, W. M., 1855; Kenyon, E. C., Jr., 1951; Kindle, E. M., 1934; Kniffen, F. B., 1929, 1931, 1932; Krumbein, W. C., 1947; Lawson, A. C., 1893a, 1893b, 1894, 1914, 1950; Lawson, L. M., 1950; LeConte, J., 1891; Leeds, C. T., 1915, 1936; Leeds, C. T., Vanoni, V. A. and Knapp, R. T., 1934; Livingston, A., Jr., 1939; Louderback, G. D., 1940, 1941; Ludwick, J. C., Jr., 1950; McArthur, W. P., 1850; McEwen, G. F., 1940b; McKee, E. D., 1939; MacGinitie, G. E., 1935; Marlette, J. W., 1954; Maxson, J. H., 1931, 1932; Means, T. H., 1928, 1931; Menard, H. W. and Ludwick, J. C., 1951; Moore, D. G., 1951; Morrison, R. L., 1930; Nelson, J. W., Dean, W. C., Kocher, A. E., Watson, E. B. and Carpenter, E. J., 1920; Nelson, J. W., Zinn, C. J., Strahorn, A. T., Watson, E. B. and Dunn, J. E., 1919; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951; O'Brien, M. P., 1936a, 1939; Orange County Planning Commission, 1941; Page, G. B., 1950; Palmer, R. H., 1928; Place, J. L., 1952; Purer, E. A., 1942; Putnam, W. C., 1937c, 1938; Reagan, J. W., 1915; Revelle, R., 1938, 1950; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Robertson, R. R., 1942; Sanchez, P. C., 1934b, 1934c; San Francisco Bay Marine Piling Committee, 1921; Schupp, R. D., 1953; Sears, C. B., 1876; Shaler, N. S., 1895; Shepard, F. P., 1932, 1937b, 1937f, 1941a, 1949d, 1950b, 1950c, 1950e, 1950f, 1952a; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1951b; Shepard, F. P., Inman, D. L. and Fisher, R. L., 1951; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Stetson, H. C., 1939; Shuler, W. R., 1951; Smith, W. S. T., 1897, 1902; Spencer, J. W., 1890; Stevenson, R. E., 1954; Storie, R. E. and Carpenter, E. J., 1929; Sumner, F. B., Louderback, G. D., Schmitt, W. L. and Johnston, E. C., 1914; Sverdrup, H. U., 1938c; Swain, F. E., 1951; Thompson, W. O., 1937; Toit, A. L. du, 1940; Trask, P. D., 1939, 1952b; Trask, P. D. and Rolston, J. W., 1950a; Troxell, H. C. and Others, 1942; Twenhofel, W. H., 1943, 1946; Udden, J. A., 1914; Upham, W., 1899; Upson, J. E., 1949a; U. S. Waterways Experiment Station, Vicksburg, Mississippi, 1935, 1950; Vickery, F. P., 1927a, 1927b; White, D., 1911; Whiting, W. D. and Others, 1858; Whittemore, G. F., 1928; Wiegel, R. L., Patrick, D. A. and Kimberley, H. L., 1953; Wilson, M. E., 1907; Wood, H. O., 1915; Woodford, A. O., 1951; Wright, R., 1937; Yale, C. G., 1879; ZoBell, C. E., 1947d

Strike and Dip: Fox, L. S., 1930; Menard, H. W., Dill, R. F. et al, 1954

Strontium: Lowenstam, H. A., 1954 (also Sr/Ca); McEwen, G. F., 1934a; Revelle, R. and Emery, K. O., 1951; Thompson, T. G. and Robinson, R. J., 1932; Vaughan, T. W., 1933

Submarine Cables - see Engineering

Submarine Pipelines - see Engineering

Submarine Slopes - see Escarpments

Submarine Canyon, Sea Valley, Drowned Valley, Mock Valley (See also: Rift Valley): Anonymous, 1927, 1939, 1940d, 1941a; Allen, W. E., 1941a; Averill, C. V. and Others, 1946; Beach Erosion Board, 1948h, 1948i, 1948j, 1949c, 1952b, 1953c, 1954a, 1954b; Bell, H. S., 1942; Benest, H., 1899; Bigelow, H. B. and Leslie, M., 1930; Bruff, S. C., 1946; Bucher, W. H., 1940; Buffington, E. C., 1951, 1952; Bullard, E. C., 1940; Burt, W. V. and Saur, J. F. T., Jr., 1948; Butcher, W. S., 1951a (sea valley); Carsola, A. J. and Dietz, R. S., 1952; Carter, G. F., 1948; Clements, T. and Emery, K. O., 1947; Cohee, G. V., 1938; Colbert, L. O., 1939; Congressional Documents, 1940a, 1949-1950b, 1953b; Crandall, H., 1915; Crowell, J. C., 1950, 1952; Darrow, W. E., 1942; David, L., 1947; Davidson, G., 1887, 1897; Davis, W. M., 1932, 1933; Dietz, R. S., 1947b, 1952a, 1952b, 1953, 1954; Dietz, R. S. and Emery, K. O., 1938a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dietz, R. S. and Menard, H. W., 1951b; Dill, R. F., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1952, 1954; Dunham, J. W., 1951; Eaton, J. E., 1932, 1939; Emery, K. O., 1941a, 1950c, 1952a, 1952b; Emery, K. O., Butcher, W. S., Gould, H. R., and Shepard, F. P., 1952 (sea valley); Emery, K. O. and Natland, M. L., 1952; Emery, K. O. and Shepard, F. P., 1941, 1945; Emery, K. O. and Tschudy, R. H., 1941; Ewing, G. C., 1950b; Fairbanks, H. W., 1897, 1904; Fewkes, J. W., 1889; Fisher, R. L. and Mills, R., 1952; Ford, J. L. C., 1942; Friedman, S. L., 1949; Galliher, E. W., 1935b, 1935c; Garrison, L. E. and Takasaki, K. L., 1950; Goldberg, J., 1940; Grant, U. S. and Sheppard, W. E., 1939; Griffin, D. F., 1944; Grim, R. E., Dietz, R. S. and Bradley, W. F., 1949; Handin, J. W., 1949, 1951; Hanna, G. D., 1952; Hershey, O. H., 1903; Hess, H. H. and MacClintock, P., 1936; Hill, R. T., 1928b; Hinds, N. E. A., 1952; Holway, R. S., 1905, 1914; Holzman, J. E., 1950; Horrer, P. L., 1950; Hubbs, C. L. and Rechnizer, A. B., 1952; Inman, D. L., 1949, 1950, 1953a, 1953b; Isaacs, J. D., Schorr, S. and Chinn, A. J., 1947; Jenkins, O. P., 1943a, 1943b; Jones, E. L., 1918; Kuenen, Ph. H., 1947; Landes, K. K., 1952a, 1952b; Lawson, A. C., 1893a, 1924, 1948, 1950; LeConte, J., 1891; Leeds, C. T., 1936; Leipper, D. F., 1950; Littlehales, G. W., 1932a; Livingston, A., Jr., 1939; Louderback, G. D., 1919; Ludwick, J. C., Jr., 1950; McEwen, G. F., 1916, 1927; MacDonald, G. A., 1934; MacDonald, G. A., Shepard, F. P. and Cox, D. C., 1947; Ma, T. Y. H., 1952; Marlette, J. W., 1954; Maxson, J. H., 1932; Menard, H. W. and Dietz, R. S., 1951; Menard, H. W. and Ludwick, J. C., 1951; Milner, F., 1941; Moore, D. G., 1951; Munk, W.

H., 1948; Munk, W. H. and Traylor, M. A., 1947; Murray, H. W., 1939; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Norris, R. M., 1951; O'Brien, M. P., 1936a; Page, G. B., 1950; Peel, K. P., 1951; Phleger, F. B., 1951; Putnam, W. C., 1938; Reed, R. D., 1933a, 1934; Revelle, R. and Shepard, F. P., 1939a, 1939b, 1943; Richter, C. M., 1887; Richardson, R. W., 1923; Ritter, W. E., 1902; Rude, G. T., 1933; Schaffer, F. X., 1940?; Schupp, R. D., 1953; Scripps Institution of Oceanography, 1945a, 1945b, 1952i, 1953d, 1953f; Shepard, F. P., 1931, 1932, 1933a, 1933b, 1933c, 1934a, 1934b, 1934c, 1935a, 1935b, 1935c, 1935e, 1936a, 1936b, 1936c, 1936d, 1936e, 1936f, 1936g, 1936h, 1937a, 1937b, 1937d, 1937e, 1937g, 1938a, 1938b, 1938c, 1938d, 1938e, 1940e, 1941b, 1941c, 1942b, 1942c, 1943a, 1946, 1947a, 1947b, 1948a, 1948b, 1948c, 1948d, 1949a, 1949b, 1949c, 1949d, 1949e, 1950a, 1950b, 1950c, 1950d, 1950e, 1950g, 1951a, 1951b, 1951c, 1951d, 1951e, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1937, 1941, 1945; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Shepard, F. P. and Inman, D. L., 1949, 1951a, 1951b; Shepard, F. P. and MacDonald, G. A., 1934, 1938; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938; Shepard, F. P. and Sayner, D. B., 1953; Shepard, F. P. and Stetson, H. C., 1939; Shepard, F. P. and Wrath, W. F., 1937; Shuler, W. R., 1952; Shumway, G. A., 1953; Skogsberg, T., 1936; Smith, A. G. and MacKenzie, G., Jr., 1948; Smith, J. P., 1910; Smith, P. A., 1940; Smith, W. D., 1933a; Smith, W. S. T., 1900, 1902; Spencer, J. W., 1890; Stelzenmuller, W. B., 1949; Stevenson, R. E., 1954; Sverdrup, H. U., 1938c, 1940e, 1944b; Sverdrup, H. U. and Staff, 1941, 1942, 1943b; Tanner, Z. L., 1892b, 1894; Toit, A. L. du, 1940; Trask, P. D., 1931b; Treasher, R. C., 1937; Uchupi, E., 1954; Upham, W., 1890, 1899; Upson, J. E., 1949b; Vaughan, T. W., 1936; Weeks, L. G., 1952; Whitcroft, H. T., 1944; Williams, E. A. and Isaacs, J. D., 1952; Wittich, E., 1920; Wood, H. O., 1915; Woodford, A. O., 1951

Submarine Canyons, Age of: Crowell, J. C., 1952; Emery, K. O., 1941a; Emery, K. O. and Shepard, F. P., 1945; Handin, J. W., 1949; Hess, H. H. and MacClintock, P., 1936; Jenkins, O. P., 1943b; Shepard, F. P., 1935a, 1935e, 1936g, 1938f, 1948d, 1949d; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Stetson, H. C., 1939; Woodford, A. O., 1951

Submarine Canyons, Changes in, Depth Changes, Cut and Fill, Submarine Slumping, Turbidity Currents. Generally applied to head of submarine canyons. (See also: Submarine Canyons, Head of): Anonymous, 1939; Beach Erosion Board, 1952b; Buffington, E. C., 1952; Crowell, J. C., 1952; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Inman, D. L., 1949, 1950; Kuenen, Ph. H., 1947; Ludwick, J. C., Jr., 1950; Marlette, J. W., 1954; Norris, R. M., 1951; Scripps Institution of Oceanography, 1952i, 1953d, 1953f; Shepard, F. P., 1934a, 1935a, 1936d, 1936f, 1937a, 1938b, 1938c, 1939c, 1941a, 1946, 1948b, 1948c, 1948d, 1949b, 1949c, 1949e, 1950d, 1950g, 1951a, 1951d, 1952a, 1953; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1951b; Sverdrup, H. U., 1938c

Submarine Canyons, Characteristics: Bucher, W. H., 1940; Cohee, G. V., 1938; Crowell, J. C., 1950, 1952; Davis, W. M., 1933; Dill, R. F., Dietz, R. S. and Stewart, H., 1952, 1954; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Hess, H. H. and MacClintock, P., 1936; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; Marlette, J. W., 1954; Maxson, J. H., 1932; Menard, H. W. and Ludwick, J. C., 1951; Norris, R. M., 1951; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Schupp, R. D., 1953; Shepard, F. P., 1931, 1933a, 1933b, 1934a, 1934b, 1935a, 1935b, 1935c, 1936g, 1937b, 1937e, 1938a, 1938f, (comparison with land valleys), 1940b, 1940e, 1941c, 1943a, 1946, 1947a, 1948b, 1949b, 1949e, 1950d, 1950e, 1951c, 1951e; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941 (comparison with land valleys); Smith, W. S. T., 1902; Toit, A. L. du, 1940; Upham, W., 1899; Woodford, A. O., 1951

Submarine Canyons, Currents in: Crowell, J. C., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Handin, J. W., 1949; Leipper, D. F., 1950; Revelle, R. and Shepard, F. P., 1939a, 1939b; Ritter, W. E., 1902; Shepard, F. P., 1933c, 1936g, 1940e, 1941a, 1947b, 1948b, 1951e; Shepard, F. P. and Emery, K. O., 1941; Smith, W. S. T., 1902; Sverdrup, H. U. and Staff, 1943b; Toit, A. L. du, 1940

Submarine Canyons, Distribution of: Crowell, J. C., 1952; Davidson, G., 1887; Hess, H. H. and MacClintock, P., 1936; Hinds, N. E. A., 1952; Lawson, A. C., 1950; LeConte, J., 1891; MacDonald, G. A., 1934; Norris, R. M., 1951; O'Brien, M. P., 1936a; Richardson, R. W., 1923; Shepard, F. P., 1931, 1933b, 1933c, 1934b, 1935a, 1935b, 1935e, 1936c, 1936h, 1937d, 1937g, 1938a, 1941b, 1943a, 1949e, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1937, 1941; Smith, W. S. T., 1900; Spencer, J. W., 1890; Sverdrup, H. U. and Staff, 1941; Woodford, A. O., 1951

Submarine Canyons, Floor of: Anonymous, 1939; Beach Erosion Board, 1954b; Cohee, G. V., 1938; Congressional Documents, 1953b; Davidson, G., 1887, 1897; Davis, W. M., 1933; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Garrison, L. E. and Takasaki, K. L., 1950; Hinds, N. E. A., 1952; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; MacDonald, G. A., 1934; Marlette, J. W., 1954; Menard, H. W. and Ludwick, J. C., 1951; Revelle, R. and Shepard, F. P., 1939b; Ritter, W. E., 1902; Schupp, R. D., 1952; Scripps Institution of Oceanography, 1952i; Shepard, F. P., 1932, 1933b, 1933c, 1934b, 1935a, 1935e, 1936d, 1936f, 1937b, 1937e, 1938a, 1939d, 1940a, 1940b, 1941a, 1947b, 1948b, 1948c, 1948d, 1949b, 1949d, 1949e, 1950a, 1950d, 1951a, 1951b, 1951d, 1951e, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1949; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P., Revelle, R. and Dietz, R. S., 1939; Smith, W. S. T., 1902; Tanner, Z. L., 1892b; Toit, A. L. du, 1940; Weeks, L. G., 1952; Woodford, A. O., 1951

Submarine Canyons, Gradient of: Cohee, G. V., 1938; Congressional Documents, 1953b; Crowell, J. C., 1952; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Emery, K. O., Butcher, W. S., Gould, H. R., and Shepard, F. P., 1952; Handin, J. W., 1949; Hinds, N. E. A., 1952; Inman, D. L., 1950; Kuenen, Ph. H., 1947; Ma, T. Y. H., 1952; Marlette, J. W., 1954; Moore, D. G., 1951; Murray, H. W., 1939; Rude, G. T., 1933; Schupp, R. D., 1953; Shepard, F. P., 1934a, 1934c, 1935a, 1937a, 1937b, 1937e, 1938f, 1948b, 1950d, 1950e, 1951d; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Smith, W. S. T., 1902; Spencer, J. W., 1890; Toit, A. L. du, 1940; Upham, W., 1899; Woodford, A. O., 1951

Submarine Canyons, Head of: Anonymous, 1939; Beach Erosion Board, 1949c, 1952b; Cohee, G. V., 1938; Congressional Documents, 1953b; Crowell, J. C., 1950, 1952; Davidson, G., 1897; Dunham, J. W., 1951; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Fisher, R. L. and Mills, R., 1952; Garrison, L. E. and Takasaki, K. L., 1950; Handin, J. W., 1949; Inman, D. L., 1949, 1950; Kuenen, Ph. H., 1947; Lawson, A. C., 1950; Ludwick, J. C., Jr., 1950; MacDonald, G. A., 1934; Marlette, J. W., 1954; Norris, R. M., 1951; Scripps Institution of Oceanography, 1952i, 1953d, 1953f; Shepard, F. P., 1933b, 1933c, 1935a, 1936d, 1936e, 1936f, 1937a, 1938e, 1940a, 1941a, 1946, 1947a, 1948b, 1948c, 1949b, 1949c, 1949d, 1950a, 1950d, 1950g, 1951a, 1951b, 1951d, 1951e, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Inman, D. L., 1951a, 1951b; Sverdrup, H. U., 1938c;

Woodford, A. O., 1951

Submarine Canyons, Loss of Sediment into (See also: Sedimentation, Sediment Trap): Congressional Documents, 1953b; Goldberg, J., 1940; Griffin, D. F., 1944; Handin, J. W., 1951; Marlette, J., 1954; Nicholson, G. F., Grant, U. S., Shepard, F. P. and Crowell, J. C., 1946; Page, G. B., 1950; Phleger, F. B., 1951; Shepard, F. P., 1933b; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938 (influence of canyons on sediment distribution)

Submarine Canyons, Origin of:

Currents: Bucher, W. H., 1940; Crowell, J. C., 1950, 1952; Davis, W. M., 1933; Kuenen, Ph. H., 1947; Lawson, A. C., 1924; Reed, R. D., 1933a; Shepard, F. P., 1933a, 1933c, 1934b, 1935a, 1935b, 1936f, 1936g, 1938e, 1938f, 1940b, 1948b; Shepard, F. P. and Emery, K. O., 1941; Smith, W. S. T., 1902; Toit, A. L. du, 1940; Upson, J. E., 1949b

Density or Turbidity Currents, Mudflows, Submarine Landslides, Slumping: Bell, H. S., 1942; Bucher, W. H., 1940; Butcher, W. S., 1951a; Crowell, J. C., 1950; Davis, W. M., 1932, 1933; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Hess, H. H. and MacClintock, P., 1936; Hinds, N. E. A., 1952; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; Shepard, F. P., 1933a, 1936f, 1936g, 1937b, 1938a, 1938c, 1938f, 1943a, 1948b, 1948c, 1949b, 1949e, 1951c, 1951d, 1951e, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941, 1945; Shepard, F. P., Emery, K. O. and LaFond, E. C., 1941; Toit, A. L. du, 1940; Weeks, L. G., 1952; Woodford, A. O., 1951

Subaerial: Benest, H., 1899; Bucher, W. H., 1940; Bullard, E. C., 1940; Butcher, W. S., 1951a; Cohee, G. V., 1938; Crowell, J. C., 1950, 1952; Davis, W. M., 1932; Emery, K. O., 1950c; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Fairbanks, H. W., 1897; Fewkes, J. W., 1889; Ford, J. L. C., 1942; Grant, U. S. and Sheppard, W. E., 1939; Hershey, O. H., 1903; Hess, H. H. and MacClintock, P., 1936; Hinds, N. E. A., 1952; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; Lawson, A. C., 1893a, 1924; LeConte, J., 1891; Livingston, A., Jr., 1937; Louderback, G. D., 1919; Maxson, J. H., 1932; Reed, R. D., 1933a; Shepard, F. P., 1931, 1933a, 1933b, 1933c, 1934b, 1935a, 1935b, 1935c, 1935e, 1936c, 1936g, 1936h, 1937b, 1938a, 1938f, 1940b, 1940e, 1941b, 1941c, 1943a, 1948b, 1948c, 1949b, 1949d, 1949e, 1951c, 1951e, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and Stetson, H. C., 1939; Smith, W. S. T., 1900, 1902; Spencer, J. W., 1890; Toit, A. L. du, 1940; Uchupi, E., 1954; Upham, W., 1890, 1899; Upson, J. E., 1949b; Woodford, A. O., 1951

Submarine Spring Sapping: Benest, H., 1899; Bucher, W. H., 1940; Hinds, N. E. A., 1952; Kuenen, Ph. H., 1947; Shepard, F. P., 1933a, 1933c, 1943a, 1948c, 1949b, 1949e; Shepard, F. P. and Emery, K. O., 1941; Toit, A. L. du, 1940

Structural, Diastrophism including Faulting: Fairbanks, H. W., 1897; Hinds, N. E. A., 1952; Kuenen, Ph. H., 1947; Lawson, A. C., 1893, 1924; Livingston, A., Jr., 1939; Reed, R. D., 1933a; Richardson, R. W., 1923; Shepard, F. P., 1931, 1933a, 1933c, 1934b, 1935a, 1935b, 1938e, 1948c, 1949b, 1949e, 1951c; Shepard, F. P. and Emery, K. O., 1941; Smith, W. S. T., 1900, 1902; Toit, A. L. du, 1940; Woodford, A. O., 1951

Tunamis: Bucher, W. H., 1940; Kuenen, Ph. H., 1947; Shepard, F. P., 1948c, 1949b, 1949e; Shepard, F. P. and Emery, K. O., 1941

Other: Davis, W. M., 1932, 1933; Eaton, J. E., 1939; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Kuenen, Ph. H., 1947; Landes, K. K., 1952a; Putnam, W. C., 1938; Shepard, F. P., 1931, 1933a, 1940d, 1941c, 1946, 1949b, 1950d, 1951c, 1951e, 1952a; Shepard, F. P. and Emery, K. O., 1941, 1945; Spencer, J. W., 1890

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Submarine Canyons, Walls of: Beach Erosion Board, 1949c (slope), 1954b; Cohee, G. V., 1938; Congressional Documents, 1953b; Crowell, J. C., 1952; Davis, W. M., 1933; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Emery, K. O., 1941a; Emery, K. O., Butcher, W. S., Gould H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1941, 1945; Handin, J. W., 1949; Hinds, N. E. A., 1952; Inman, D. L., 1950; Kuenen, Ph. H., 1947; MacDonald, G. A., 1934; Menard, H. W. and Ludwick, J. C., 1951; Murray, H. W., 1939; Norris, R. M., 1951; Revelle, R. and Shepard, F. P., 1939b; Richardson, R. W., 1923; Shepard, F. P., 1933b, 1934a, 1934c, 1935a, 1935b, 1935c, 1935e, 1936f, 1936g, 1937b, 1937e, 1938c, 1938e, 1938f, 1939d, 1940a, 1940b, 1941a, 1943a, 1946, 1947a, 1947b, 1948b, 1948c, 1948d, 1949b, 1949d, 1949e, 1950e, 1951a, 1951e, 1952a, 1953; Shepard, F. P. and Beard, C. N., 1938; Shepard, F. P. and Emery, K. O., 1941, 1945; Smith, A. G. and MacKenzie, G., Jr., 1948; Smith, W. S. T., 1902; Toit, A. L. du, 1940; Vaughan, T. W., 1936; Woodford, A. O., 1951

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Ludwick, J. C., 1951; Paguirigan, F., 1941; Piggot, C. S. and Urry, W. D., 1942; Revelle, R. and Shepard, F. P., 1939b; Sanchez, P. C., 1934c; Scripps Institution of Oceanography, 1953d, 1953f; Shepard, F. P., 1933b, 1933c, 1934b, 1935a, 1935b, 1936f, 1937a, 1938a, 1938c, 1938e, 1939c, 1939d, 1940a, 1940d, 1940e, 1941a, 1947a, 1947b, 1948b, 1948c, 1949b, 1949c, 1949d, 1949e, 1950a, 1950d, 1950g, 1951a, 1951b, 1951c, 1951d, 1952a, 1953; Smith, W. D., 1933b, 1933c; Sverdrup, H. U., 1938c; Walters, L., 1953

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Submarine Structures. (See also: Submarine Topography, various submarine topographic structures): Fox, L. S., 1930; Weaver, C. E., 1944

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U. S., 1947; Grant, U. S., 1941, 1944; Grant, U. S. and Sheppard, W. E., 1939; Handin, J. W., 1949; Harris, F. R. and Harlow, E. H., 1947; Hertlein, L. G. and Emerson, W. K., 1953; Kuenen, Ph. H., 1947; Landes, K. K., 1952a, 1952b; Lawson, A. C., 1914, 1950; Leonard, A. G., 1925; Leypoldt, H., 1934, 1938, 1947; Leypoldt, H. and McHenry, J. R., 1942; Louderback, G. D., 1951; McHenry, J. R., 1942; Ma, T. Y. H., 1952; Merriam, P. D., 1949; Nelson, N. C., 1909, 1910; Page, G. B., 1950, Parkin, E. J., 1948; Rappleye, H. S., 1933; Reagan, J. W., 1915; Revelle, R., 1950; Ritter, W. E., 1901; Sanchez, P. C., 1934c; Scripps Institution of Oceanography, 1953e; Shepard, F. P., 1933b, 1936g, 1940b, 1949d; Shepard, F. P. and Emery, K. O., 1941; Shuler, W. R., 1951, 1952; Shumway, G. A., 1953; Sosedko, A. F., 1950; Stevenson, R. E., 1954; Stock, C. and Furlong, E. L., 1928; Stockman, L. P., 1949a, 1949b, 1949c; Stormont, D. H., 1954b; Taylor, A. E. and Grant, U. S., 1947; Thom, W. T., Jr., 1938; Tower, M. L., 1913; Upham, W., 1890; Whittemore, G. F., 1926; Whitworth, G. W., 1932; Weaver, C. E., 1949; Wilson, M. E., 1907; Wood, H. O., 1915

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Subterranean Streams - see Submarine Springs

Sulfate - see Sulfate/Chloride Ratio (SO_4/Cl), Sulfur

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Vanadium: Goldberg, E. D., 1954; Lowenstam, H. A., 1954; Revelle, R. and Emery, K. O., 1951; Thompson, T. G. and Robinson, R. J., 1932

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Viscosity: Allen, W. E., 1941d; Goldberg, E. D., 1954; Moberg, E. G., 1928a, 1930c; Revelle, R., 1936, 1944

Volatile Solids (See also: Non-volatile Solids, Total Solids): Lipman, C. B., 1929

Volcanic Debris (See also: Ash, Purmice, Rock, Volcanic Rock): Goldberg, E. D., 1954 (volcanic glass); Piggot, C. S., 1932; Revelle, R., 1935, 1937b; Scripps Institution of Oceanography, 1953e; Shepard, F. P., Revelle, R., Dietz, R. S. and Emery, K. O., 1938

Volcanic Mud (See also: Terrigenous Sediments): Revelle, R., 1935

Volcanic Rock (See also various types of volcanic rock): Anderson, C. A., 1941; Butcher, W. S., 1951a; Chesterman, C. W., 1952; Clements, T. and Emery, K. O., 1947; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., Dietz, R. S. and Stewart, H., 1954; Eardley, A. J., 1954; Emery, K. O., 1941c, 1946b, 1947b, 1948; Emery, K. O., Butcher, W. S., Gould, H. R. and Shepard, F. P., 1952; Emery, K. O. and Shepard, F. P., 1945; Emery, K. O. and Tschudy, R. H., 1941; Gorsline, D. S., 1954; Hanna, G. D., 1952; Hansen, H. A. and Pemberton, J. R., 1950; Holzman, J. E., 1950; Norris, R. M., 1951; Pease, W. H., 1868; Revelle, R. and Shepard, F. P., 1939b; Shepard, F. P., 1948c; Shepard, F. P. and Emery, K. O., 1941; Shepard, F. P. and MacDonald, G. A., 1938; Shepard, F. P. and Wrath, W. F., 1937; Sherzer, W. F., 1910; Trask, P. D., 1931b

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Water Color - see Red Water, Turbid Water

Water Content of Sediments - see Interstitial Water

Water Masses (See also: Salinity, Temperature, T-S Curves, Water Type): Allen, W. E., 1941a, 1941c, 1946a, 1946b; California Academy of Sciences, California Department of Fish and Game, Scripps Institution of Oceanography of the University of California, U. S. Fish and Wildlife Service, and Hopkins Marine Station, Stanford University, 1951; Defant, A., 1950a; Dietz, R. S., Emery, K. O. and Shepard, F. P., 1942; Dill, R. F., 1952; Emery, K. O., 1954d; Emiliani, C., 1954; Fleming, R. H., 1939a, 1940a; Fleming, R. H., Moberg, E. G. and Revelle, R., 1937a, 1937b; Fleming, R. H. and Revelle, R., 1939; Goldberg, E. D., 1954; Horrer, P. L., 1948a; Johnson, M. W., 1939b; McEwen, G. F., 1937b, 1950; Robinson, M. K., 1951; Shepard, F. P., 1950c; Sverdrup, H. U., 1934, 1937-1938, 1938c, 1938d, 1939b, 1939c, 1940d, 1940g, 1941a, 1944a; Sverdrup, H. U. and Allen, W. E., 1939; Sverdrup, H. U., Johnson, M. W. and Fleming, R. H., 1942; Sverdrup, H. U. and Staff, 1941, 1943b; Tibby, R. B., 1941, 1944; Vaughan, T. W., 1934

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Water Type (See also: Salinity, Temperature, T-S Curves, Water Masses): Sverdrup, H. U. and Allen, W. E., 1939

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Wave Divergence - see Divergence of Waves

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A. IMPORTANT BOOKS ON MARINE GEOLOGY AND OCEANOGRAPHY

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B. OTHER BIBLIOGRAPHIES AND GENERAL REFERENCES

The following section lists: a) other bibliographies, b) references of general interest, c) references on the early history of discovery and exploration along the Pacific coast of the United States, and d) periodicals having a large number of references on oceanography and related subjects.

The purpose of this section is to aid the user in locating additional references on oceanography, marine geology and related topics.

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C. OUTLINE OF ORGANIZATIONS THAT MAY HAVE UNPUBLISHED DATA, INCLUDING A LIST OF POSSIBLE SUBJECTS

The following section is a suggested outline of possible sources of information, especially unpublished reports and data, and includes a list of topics on which there may be information.

Harbor Departments, City Councils, City and County Engineering Offices

Historical
Engineering aspects of: harbor, beach erosion and its control, pollution, stream discharge including quantity and sometimes texture of sediment discharged into harbors or ocean front; sometimes deep boring and probes have been made in connection with engineering projects.
Meteorological data including: water and air temperatures, waves, swell, currents, storms, winds etc.
Salt water intrusion.

U. S. Weather Bureau

Meteorological data including: air and sea temperatures, winds, storms, currents, upwelling, fog etc.

U. S. Coast and Geodetic Survey

Charts
Physical and chemical oceanography including: currents, waves, underwater sound, density of sea water, temperature, salinity, tidal data including seismology and seismic sea waves, variations in sea level, tide tables.
Hydrographic data including: soundings, submarine topography, bottom character (i.e. type of bottom material).
U. S. Coast Pilot Guides frequently contain pertinent data. In the early history of exploration on the West Coast of the U. S., this was about the only source of oceanographic information.

U. S. Army, Corps of Engineers

Beach erosion, its control and prevention.
Oceanographic data expecially swell, waves and currents.
Stream discharge, amount and sometimes nature of sediments deposited in harbors and on the sea floor or beaches.
Harbor and coastal engineering.
Military oceanography.

U. S. Navy Hydrographic Office

Charts
Sailing Directions
Soundings and submarine topography
Bottom sediment charts
Oceanographic data including: waves, currents, swell, density, temperature, salinity, underwater sound etc.
Meteorological data including: winds, storms, air and sea temperature.

California Division of Mines

Most reports on the California Division of Mines concern the geology and mineral resources of the State, however, there are a few scattered reports on beaches, islands, petroleum, physiography of the coastal area, including terraces.

California Division of Water Resources

Geology
Salt water intrusion
Pollution

California Water Pollution Control Board

Pollution primarily in harbors and in streams.
Physical and chemical oceanography (mostly in harbors).

California Division of Beaches and Parks

Beaches, especially legal and recreation

City and County Sewage Disposal Plants (Department of Sanitary Engineering)

Pollution
Engineering
Physical and chemical oceanography including waves, currents, turbidity etc.

California Department of Fish and Game

The Sardine Research Program being carried out by the California Department of Fish and Game and others have made many detailed oceanographic cruises off the coast of California and Baja California. Their reports include biology, physical and chemical oceanography. In addition, they have made studies of the influence of seismic surveys on fish mortality.

Local Libraries

Local libraries generally contain more reports and books of the area than will more distant ones. They frequently have copies of local reports and reports of limited distribution on harbors, and other coastal projects. Historical books, documents, and letters are often a source of information which are frequently overlooked by most scientists. Books and documents often give an insight into early conditions, characteristics of the shoreline, stream drainage including former location of streams, great storms, floods, tsunamis, earthquakes, old maps, charts, oil seeps etc. Ship logs and expedition reports likewise contain information of interest. Newspaper clippings sometimes have interesting information.

Marine Engineering Consultants and Companies

Consultants and private companies carrying out marine work may have useful information including borings, beach and harbor engineering.

Oil Companies

Many of the California oil companies undoubtedly have a host of information of the offshore region of California, primarily as a result of the recent tideland decision. Unfortunately, most of their data are restricted to company personnel and as a result generally are not available to research workers. Under certain circumstances, however, the oil companies have been known to release some data to outside personnel.

Universities and Colleges

Universities and colleges frequently have financial support by the government or other organizations and as a result have a considerable amount of data. They also have a large amount of unpublished reports, or papers in preparation for publication by the faculty and students. For example, the Sedimentation Laboratory of the Allan Hancock Foundation of the University of Southern California has several hundred research and seminar reports on marine geology, oceanography, sedimentation, and ground water.

Five universities carrying out marine research on the Pacific Coast are:

- Allan Hancock Foundation of the University of Southern California
- Hopkins Marine Station of Stanford University
- Scripps Institution of Oceanography of the University of California
- University of California, Berkeley
- University of Washington

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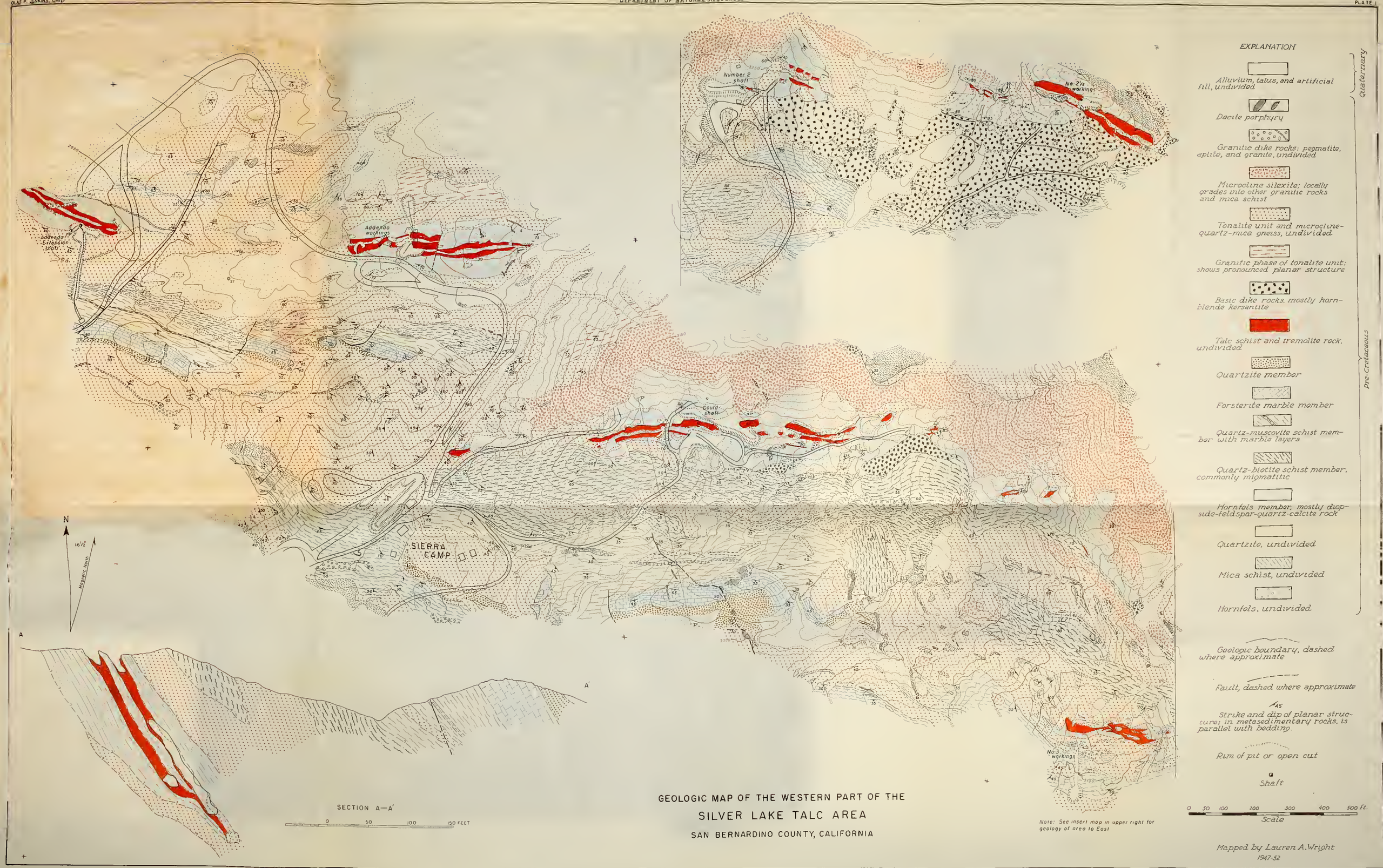
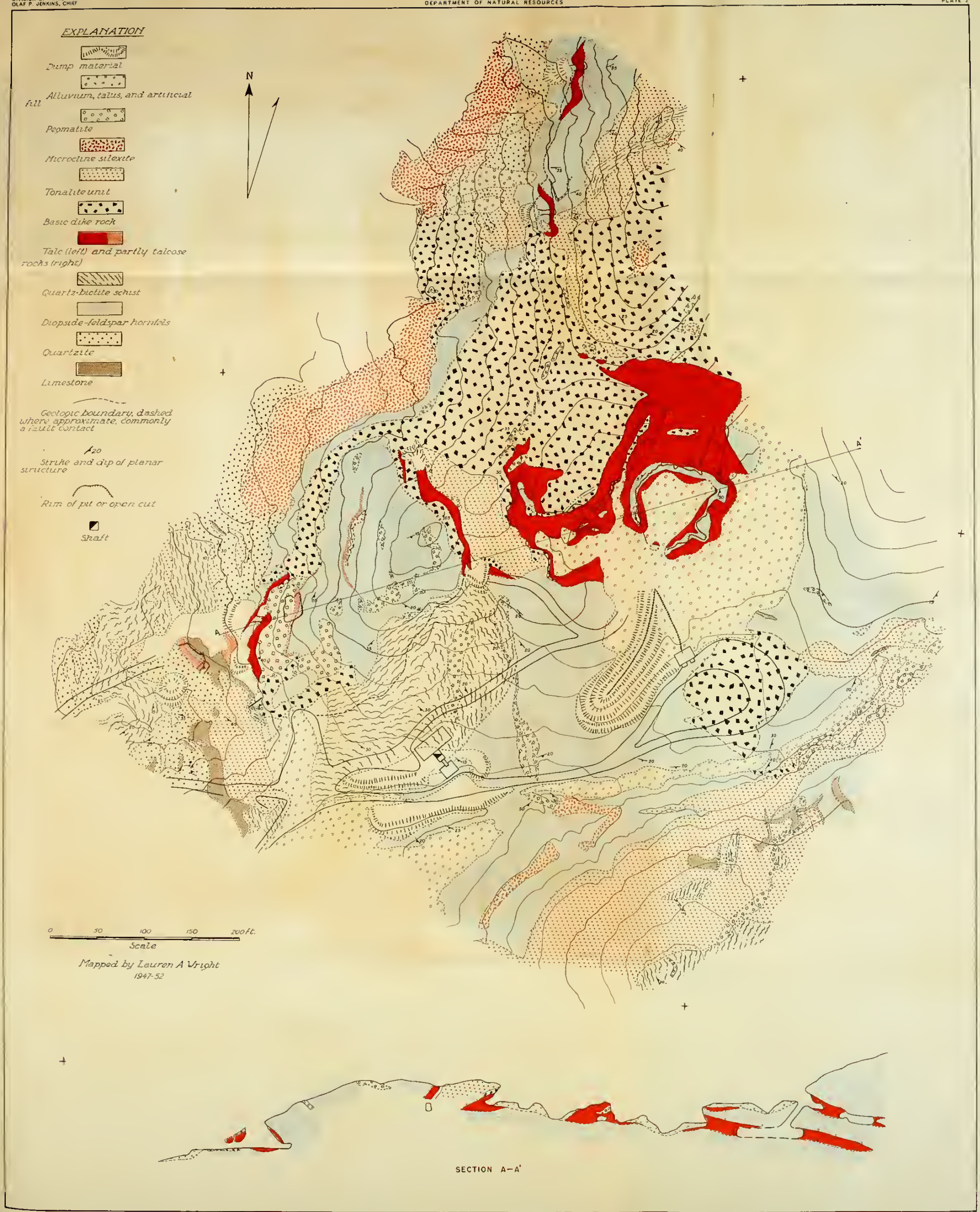
Palen Pass
Gravel
Packard Well
Thin gravel cover
Strongly feldspathized
Thick talus
EXPLANATION
JURASSIC(?)
Jmip Porphyroblastic phase of meta-igneous rock
Jmi Meta-igneous rock albite-quartz-biotite schist; commonly epidotic; highly feldspathized and recrystallized locally
TRIASSIC(?)
Rm McCoy Mountains (?) formation; conglomerate, argillite, phyllite, grit, quartz porphyry
UPPER PALEOZOIC (?)
Maria formation
IPsm Lime silicate marble
IPlm Laminated marble and siliceous marble
IPql Quartzite
IPm Marble
IPg Gypsum
IPsc Green schist, grit, & quartzite; locally gypsiferous
Undifferentiated
mim Meta-igneous and Maria formation
mc Maria formation, highly deformed complex
Contact, showing dip; dashed where approximately located or gradational; dotted where concealed
Contact, very uncertain
Fault, showing dip; dashed where approximately located
Concealed fault
Doubtful or probable fault; dotted where concealed
Fault, showing bearing and plunge of grooves, striations, or slickensides
High angle fault; U, upthrown side, D, downthrown side
Fault, showing relative movement
Thrust or low angle reverse fault; T, upper plate
Anticline, showing trace of axial plane and bearing and plunge of axis
Overturned anticline, showing trace of axial plane, direction of dip of limbs, and bearing and plunge of axis
Plunge of minor anticline
Plunge of minor syncline
Strike and dip of beds
Horizontal beds
Strike and dip of foliation
Strike of vertical foliation
Small prospect pit
Slide
GEOLOGIC MAP OF THE
PALEN MOUNTAINS GYPSUM DEPOSIT
RIVERSIDE COUNTY, CALIFORNIA
by Richard A. Hoppin, 1950
SCALE
0 200 400 800 1200 1600 2000 FEET
Contour interval 50 ft.
Base from aerial photographs



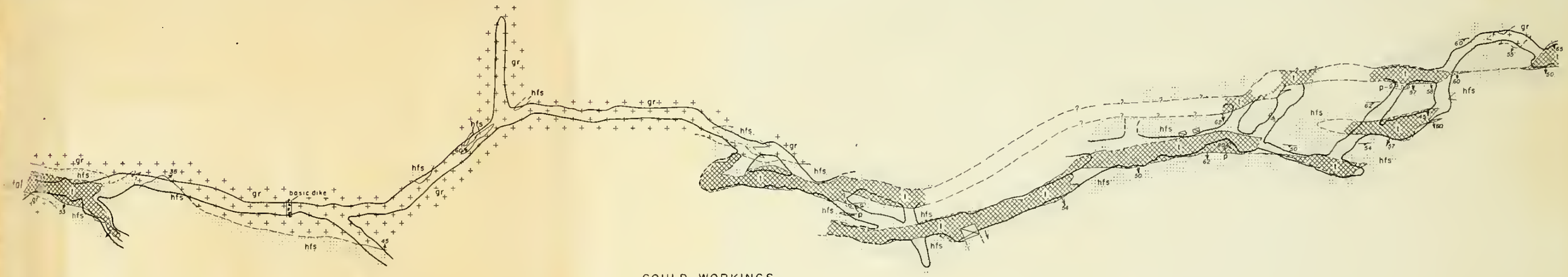
GEOLOGIC MAP OF THE WESTERN PART OF THE

SILVER LAKE TALC AREA

SAN BERNARDINO COUNTY, CALIFORNIA



GEOLOGIC MAP OF THE NUMBER 4 DEPOSITS, SILVER LAKE TALC AREA
SAN BERNARDINO COUNTY, CALIFORNIA



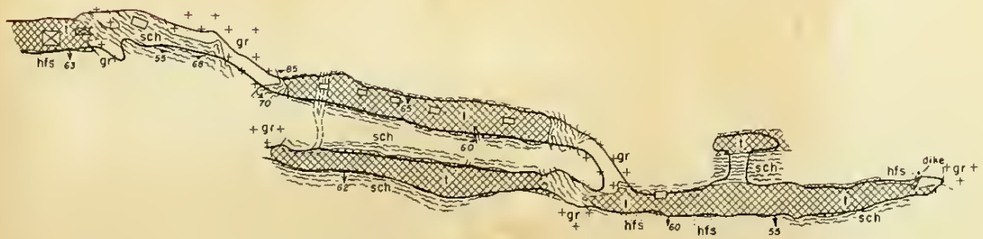
GOULD WORKINGS

GEOLOGIC MAPS OF THE SILVER LAKE TALC MINE

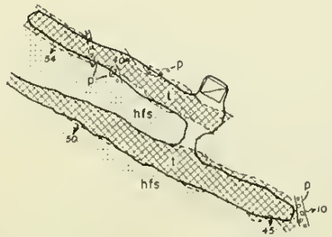
GOULD AND ADDENDA WORKINGS

SAN BERNARDINO COUNTY CALIFORNIA

50 0 SCALE 50 100 FEET



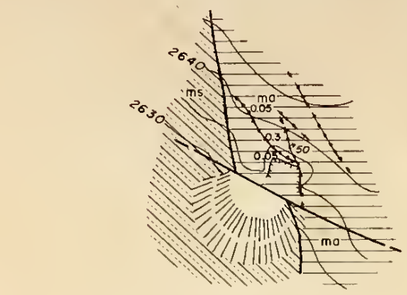
ADDENDA WORKINGS



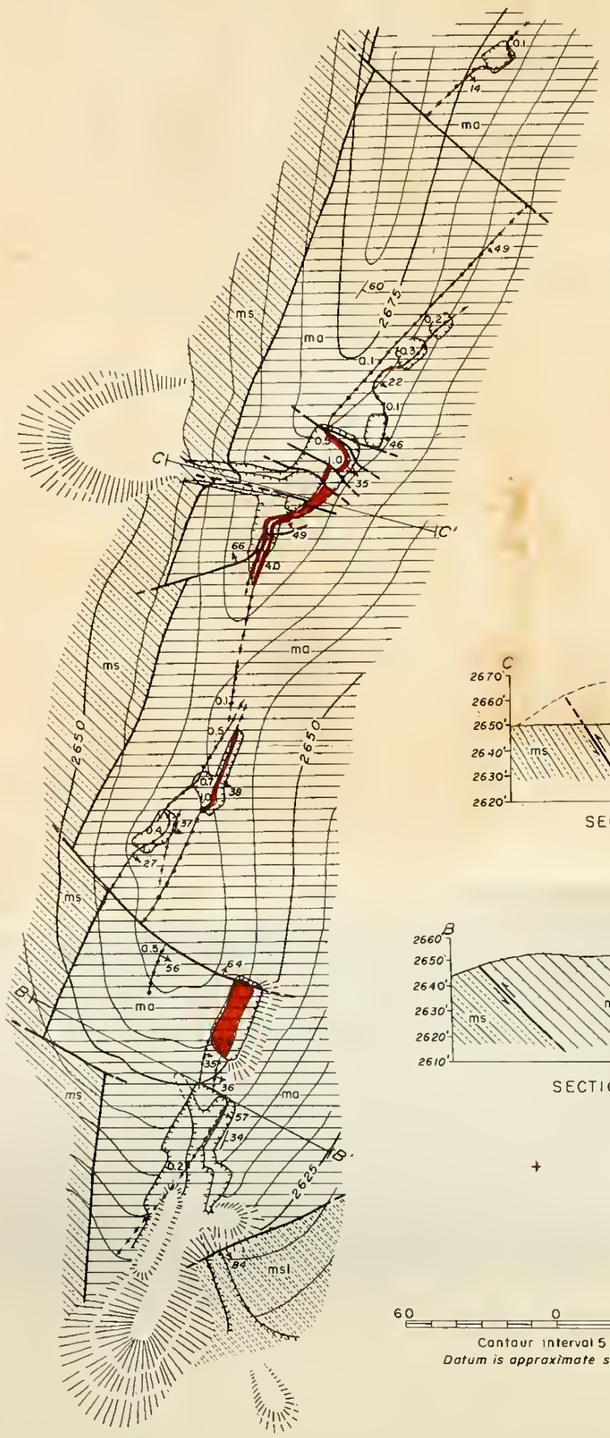
ADDENDA EXTENSION

- Talc schist and tremolite rock
- Mica schist
- Hornfels
- Basic dikes
- Granitic rocks
- Pegmatite
- Contact
- Foliation
- Raise or winze (Top, Bottom)

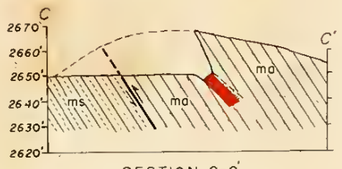
Geology by L.A Wright, 1953



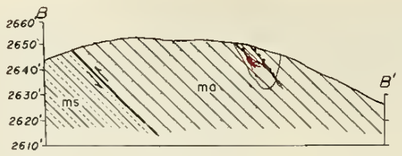
NORTHERN WORKINGS



SOUTHERN WORKINGS



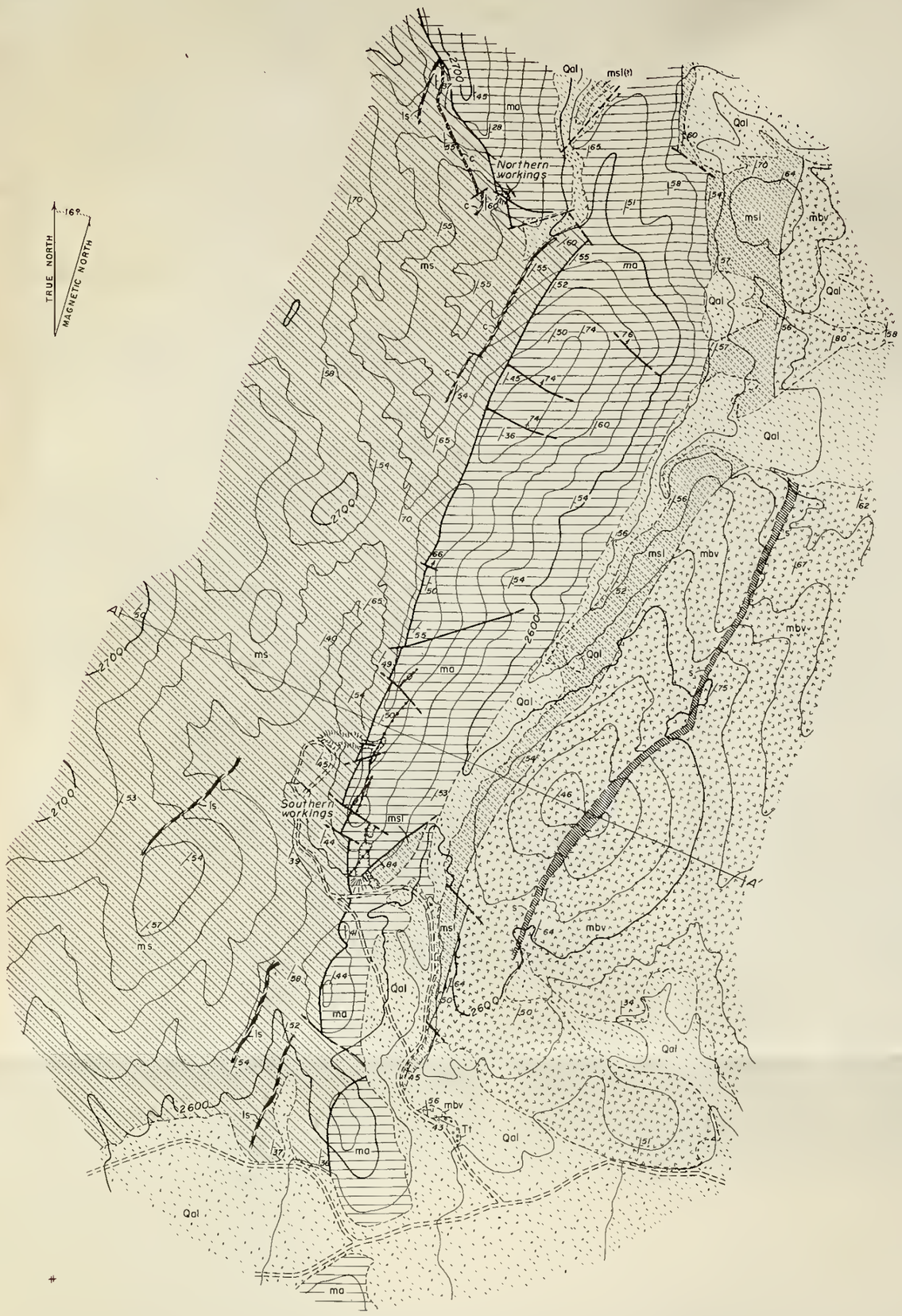
SECTION C-C'



SECTION B-B'

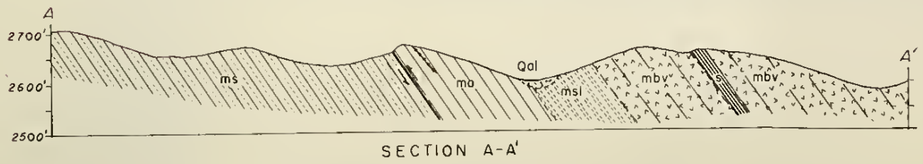
60 0 60 Feet

Contour interval 5 feet
Datum is approximate sea level



SURFACE MAP

Topography and geology by Cordell Durrell and A. C. Doley, December 1944



SECTION A-A'

300 0 300 600 Feet

Contour interval 20 feet
Datum is approximate sea level

EXPLANATION

QUATERNARY

Qal — Alluvium

TERTIARY

Tt — Silicic tuff

PRE-CRETACEOUS

ms, ls — Metamorphosed clastic sediments, tuff and silicic volcanics; c, chert, ls, limestone

s, mbv — Metamorphosed basic volcanics; s, dark schists and slates

msl — Slate with some quartzite and silicic tuff

ma — Marble

Contact (Dashed where approximately located)

Indefinite contact

Fault, showing dip (Dashed where approximately located)

Fault, showing relative movement (Shown only on sections)

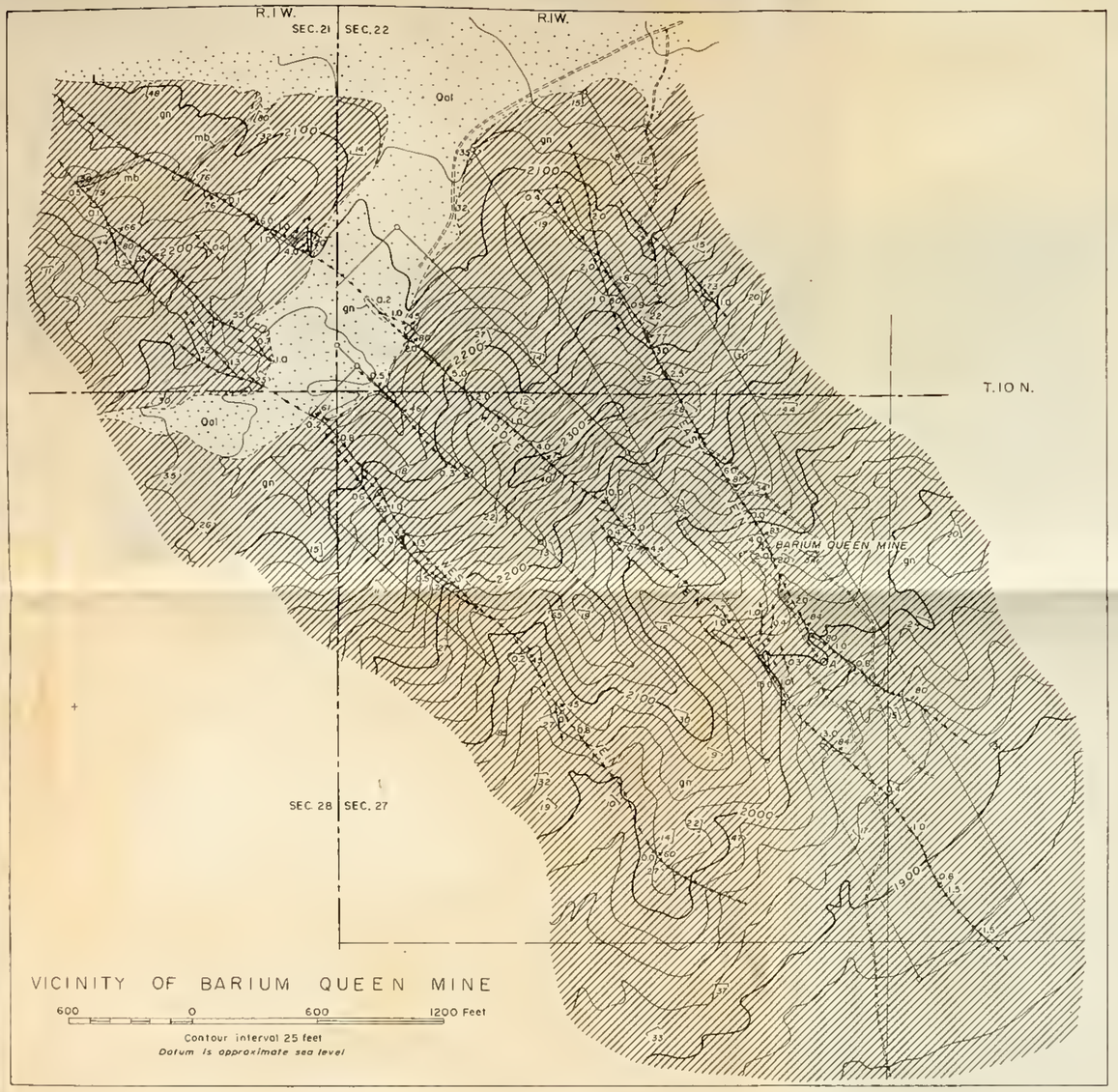
Strike and dip of beds

Barite veins, showing dip and thickness in feet (Dashed where approximately located)

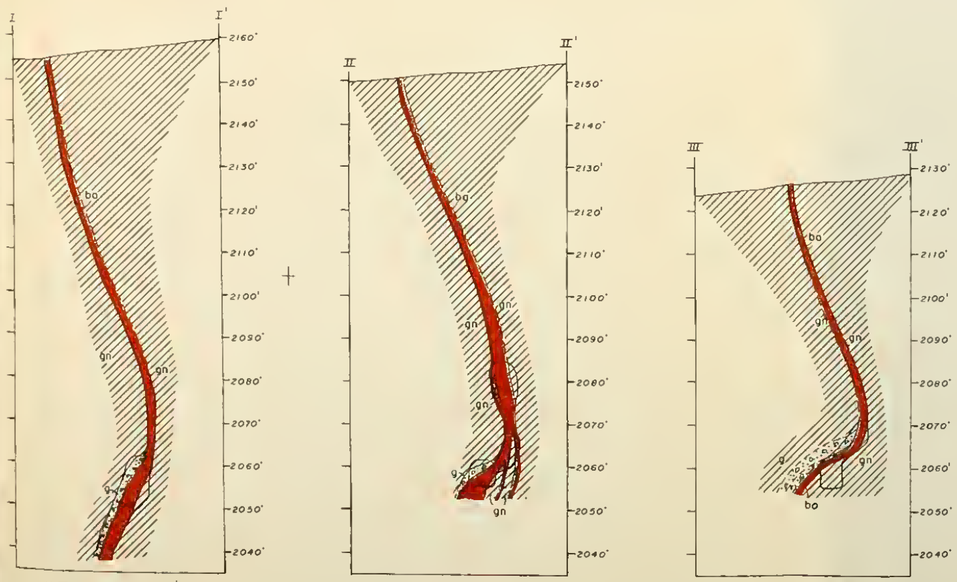
Prospect pit or open cut (Dashed where underground)

Dump

BALL BARITE DEPOSIT, SAN BERNARDINO COUNTY, CALIFORNIA



VICINITY OF BARIUM QUEEN MINE



SECTION I-I' SECTION II-II' SECTION III-III'

Topography and geology by Cordell Durrell and A. C. Daley, February 1945

BARIUM QUEEN MINE
UNDERGROUND MAP

EXPLANATION

QUATERNARY

Qal — Alluvium

AGE UNKNOWN

mb, gn — Biotite-hornblende gneiss with interbedded marble (mb), quartzite and conglomerate

Contact (Dashed where approximately located)

Contact of surficial deposits

Gouge (Dashed where approximately located)

Strike and dip of cleavage

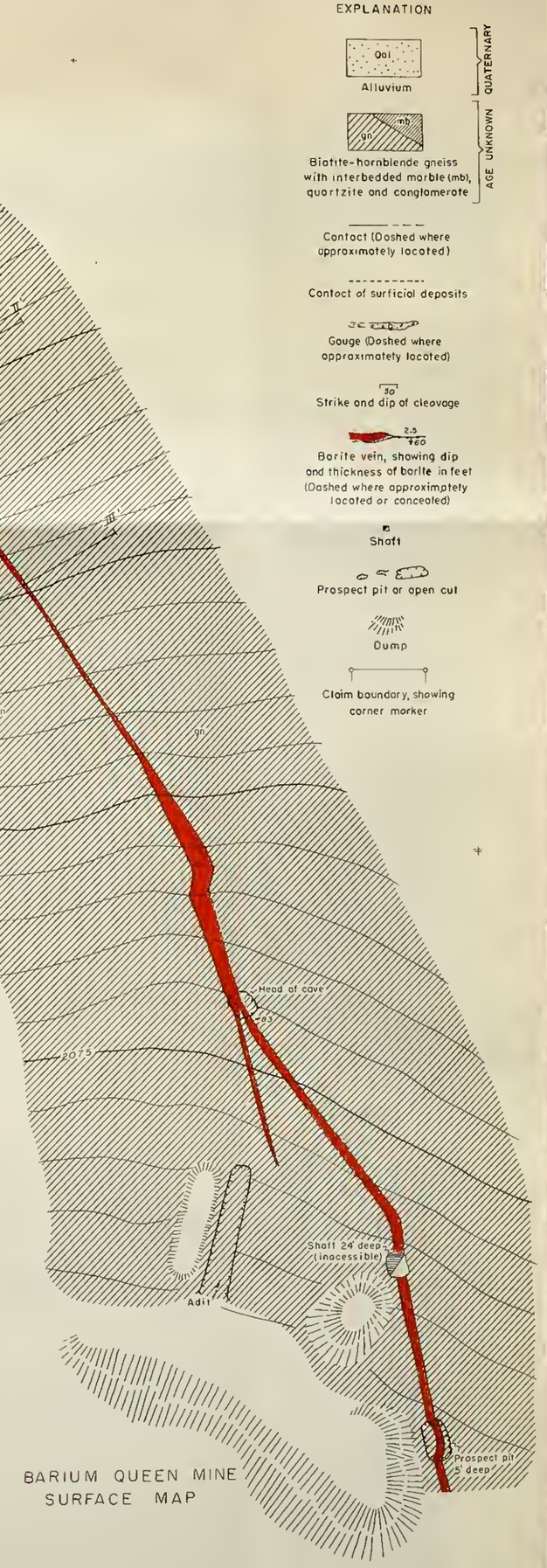
Barite vein, showing dip and thickness of barite in feet (Dashed where approximately located or concealed)

Shaft

Prospect pit or open cut

Dump

Claim boundary, showing corner marker

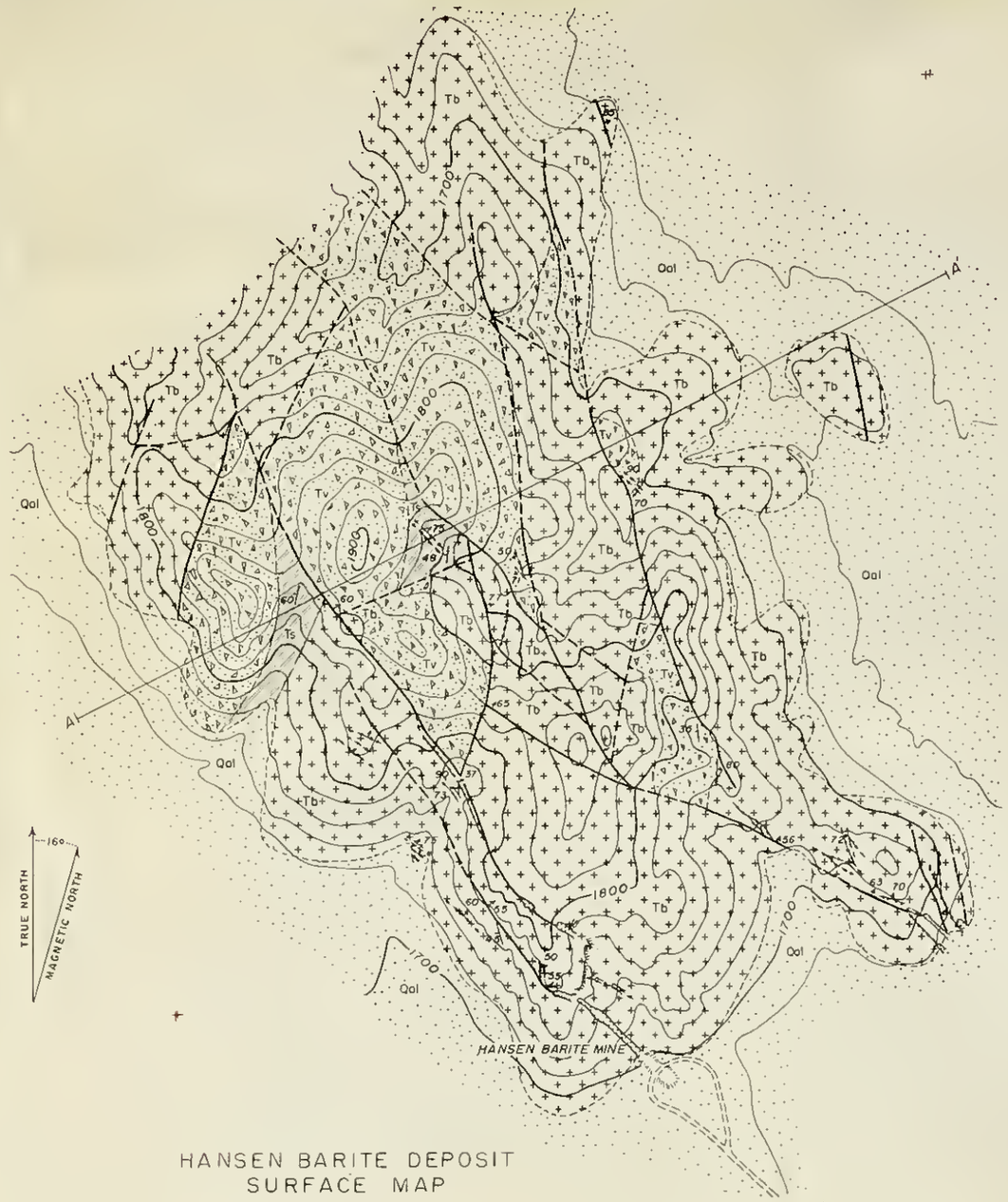


BARIUM QUEEN MINE
SURFACE MAP

BARIUM QUEEN MINE AND VICINITY, SAN BERNARDINO COUNTY, CALIFORNIA

UNDERGROUND MAP

HANSEN BARITE MINE SURFACE MAP



HANSEN BARITE DEPOSIT SURFACE MAP

Topography and geology by Cordell Durrell and A. C. Daley, April 1945

EXPLANATION

QUATERNARY

Qal — Alluvium

TERTIARY

Tv — Volcanic breccias

Ts — Red and green tuffaceous sandstones and conglomerates

Tb+ — Black and brown vesicular basalt

Contact (Dashed where approximately located

Contact of surficial deposits

Fault, showing dip (Dashed where approximately located)

Fault, showing relative movement (only in sections)

Strike and dip of beds

Barite vein, showing dip (Dashed where approximately located)

Vertical barite veins

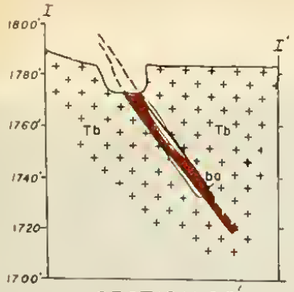
Inclined shaft

Dump

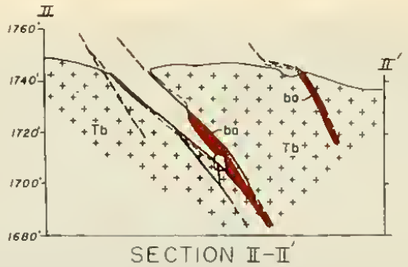
Foot of raise or winze

Head of raise or winze

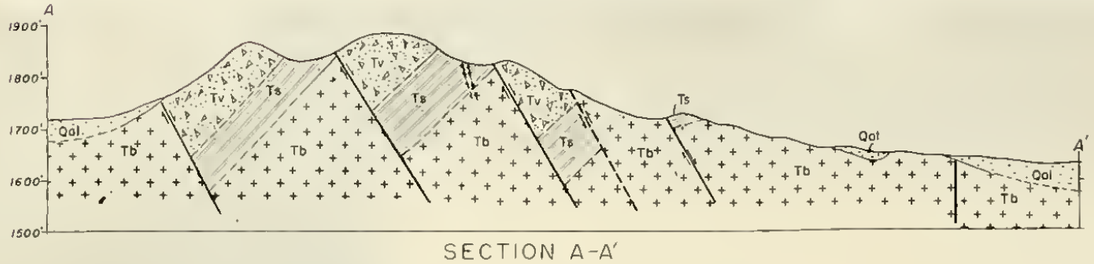
Stope



SECTION I-I'



SECTION II-II'



SECTION A-A'

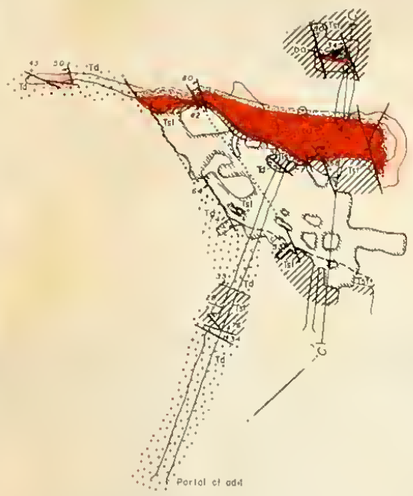
60 0 60 120 Feet

Contour interval 5 feet
Datum is approximate sea level

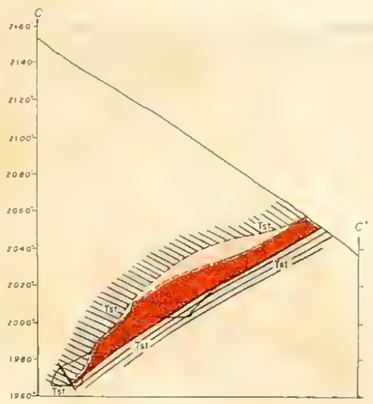
300 0 300 600 Feet

Contour interval 20 feet
Datum is approximate sea level

HANSEN BARITE DEPOSIT, SAN BERNARDINO COUNTY, CALIFORNIA



UNDERGROUND MAP

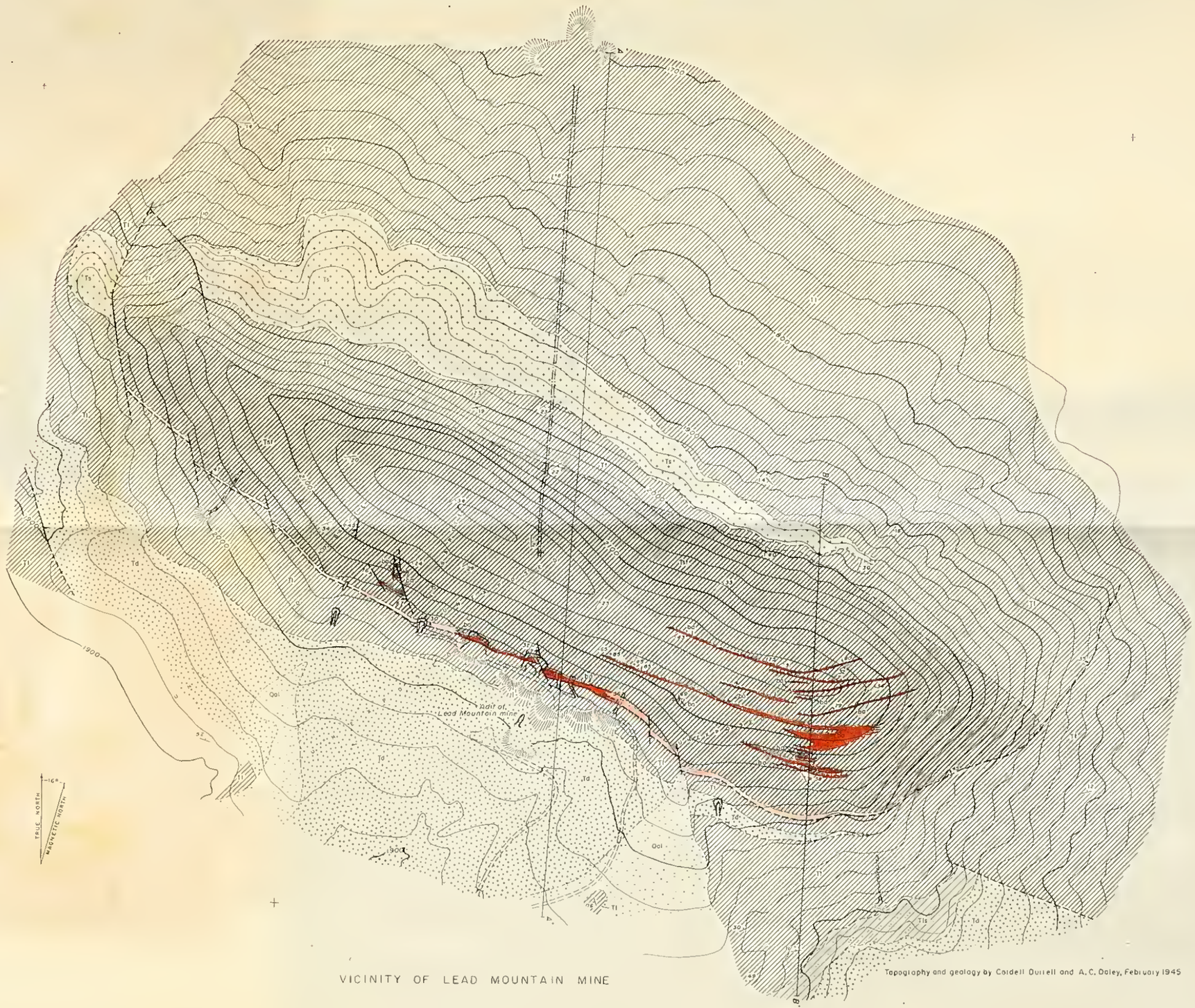


SECTION C-C'

LEAD MOUNTAIN MINE

80 0 80 Feet

Datum is approximate sea level



VICINITY OF LEAD MOUNTAIN MINE

Topography and geology by Caldell Durrell and A. C. Daley, February 1945

EXPLANATION

QUATERNARY

Qal — Alluvium

TERTIARY

Ts — Syenite

Td — Diabase

Tl, Tsl — Tl, tuff with some siltstone, sandstone, and conglomerate; Tls, silicified tuff

Tls — Limestone

Contact (Dashed where approximately located)

Surficial contact

Fault, showing dip (Dashed where approximately located)

Fault trace through inclined stope

Strike and dip of beds

Vein, showing dip with ba, barite (Dashed where approximately located)

Portal of tunnel

Underground workings (On surface map)

Prospect pit or open cut

Dump

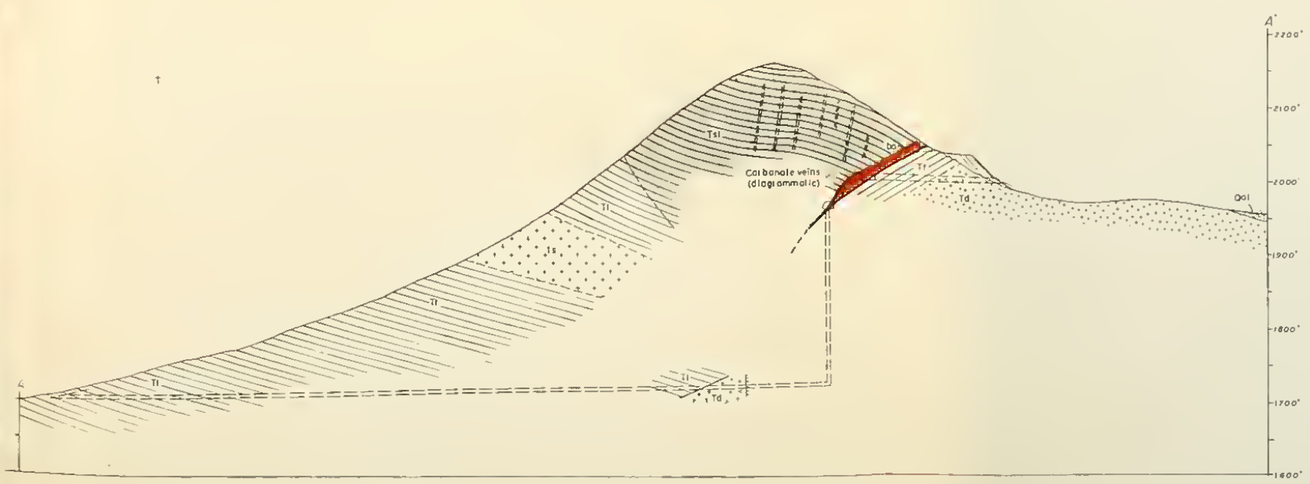
Head of vertical shaft

Head of winze

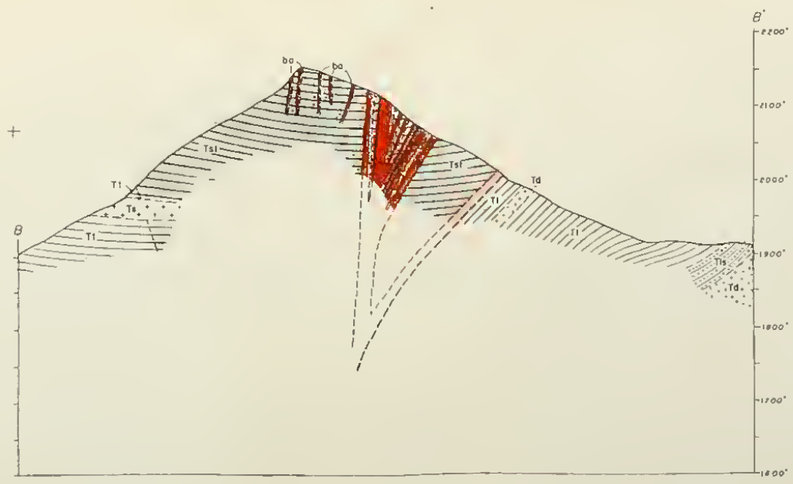
Foot of winze

Stope

Caved workings



SECTION A-A'



SECTION B-B'

200 0 200 400 600 800 Feet

Contour interval 20 feet

Datum is approximate sea level

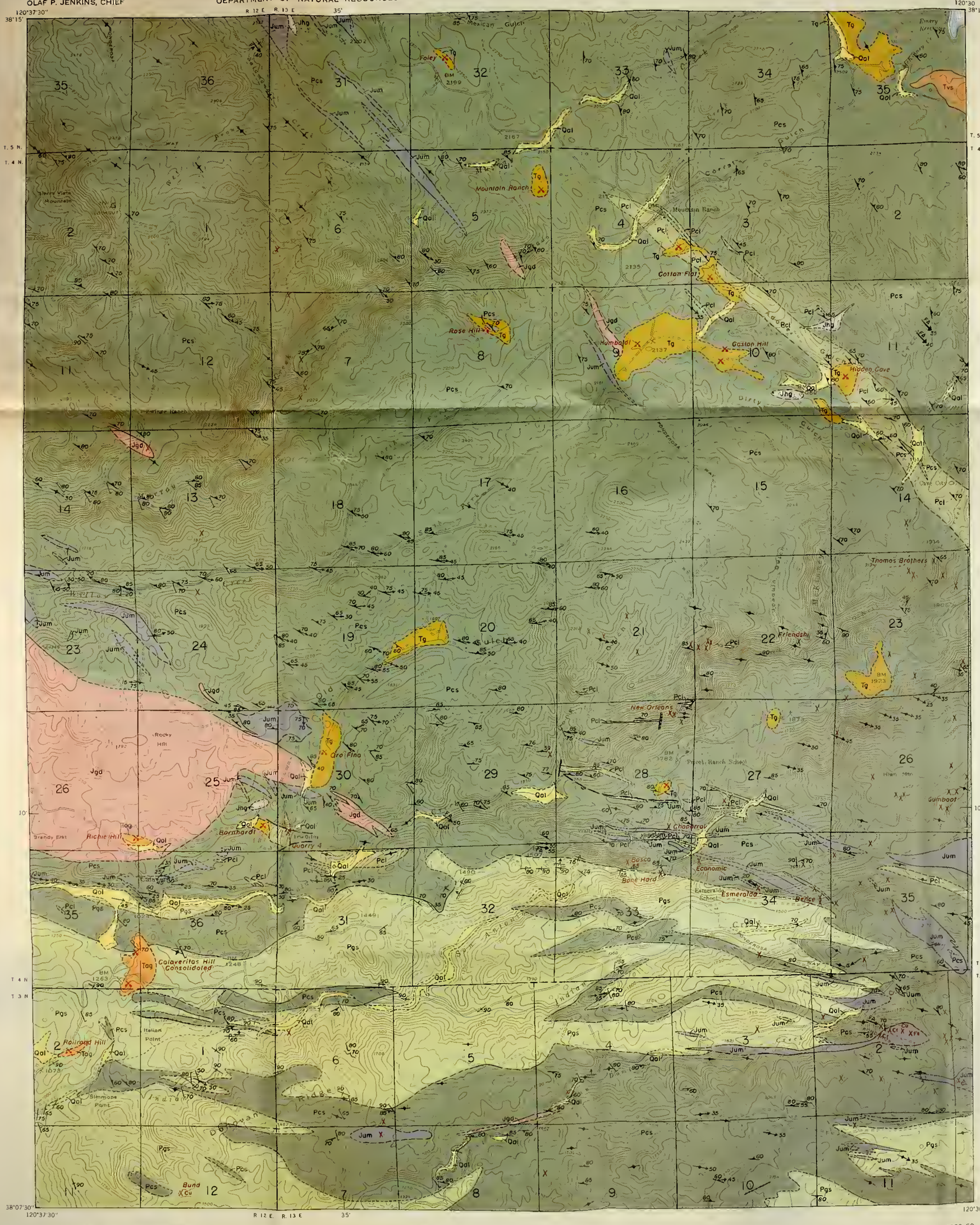
LEAD MOUNTAIN MINE AND VICINITY, SAN BERNARDINO COUNTY, CALIFORNIA

DIVISION OF MINES
OLAF P. JENKINS, CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

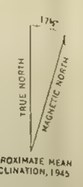
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SPECIAL REPORT 40
PLATE 1 AND PLATE 2 COMBINED



Base map enlarged from San Andreas quadrangle.
Mapped by U.S. Geological Survey, 1945.

Geology by Lorin D. Clark, 1950–52



GEOLOGIC AND ECONOMIC MAP
OF THE
CALAVERITAS QUADRANGLE
CALAVERAS COUNTY, CALIFORNIA

Scale 1:24,000

1 ½ 0 1 Mile

7000 6000 5000 4000 3000 2000 1000 0 1000 Feet

1 .5 0 1 Kilometer

Contour interval 50 feet
Datum is mean sea level

1955

EXPLANATION

QUATERNARY

Recent

Qal — Alluvial deposits
Includes placer and hydraulic mining debris.

UNCONFORMITY

TERTIARY

Miocene (?) Pliocene (?)

Tag — Auriferous gravel containing andesite detritus

UNCONFORMITY?

Miocene (?)

Tvs — Valley Springs formation
Welded rhyolite tuffs with interbedded non-welded rhyolite tuff containing minor gravel.

UNCONFORMITY?

Eocene—Oligocene (?)

Tg — Auriferous stream gravel
Includes undifferentiated Valley Springs formation consisting of interbedded stream gravel and lenticular rhyolite tuff.

UNCONFORMITY?

JURASSIC (?)

Jum — Ultramafic rocks
Mostly talc-antigorite rock, probably derived from serpentine.

Jgd — Granodiorite
Large mass includes undifferentiated hornblende gabbro and hybrid rocks.

Jhg — Hornblende gabbro and hybrid rocks

CARBONIFEROUS (?)

Pcl / Pcs — Calaveras formation
Interbedded black graphitic schist and quartzite, Pcs. Lenses of limestone, dolomite, and calcareous sediments, Pcl, locally replaced by ferruginous chert.

Pgs — Green Schist
Porphyroblastic hornblende schist, fine-grained siliceous schist, and phyllite.

Contact
Dashed where approximately located

Indefinite or inferred contact

High-angle fault
Dashed where approximately located

FA — Plunge of minor fold axis

60 — Strike and dip of beds

65 — Strike and dip of overturned beds

90 — Strike of vertical beds

40 — Generalized strike and dip of crumpled beds

Direction of tops of beds indicated by graded bedding

60 — Strike and dip of schistosity

Strike of vertical schistosity

60 — Strike and dip of parallel bedding and schistosity

Strike of vertical bedding and schistosity

60 — Strike and dip of slip cleavage

90 — Strike of vertical slip cleavage

40 — Plunge of lineation

80 60 — Strike and dip of schistosity and plunge of lineation

70 — Strike of vertical schistosity and plunge of lineation

45 — Strike and dip of joints

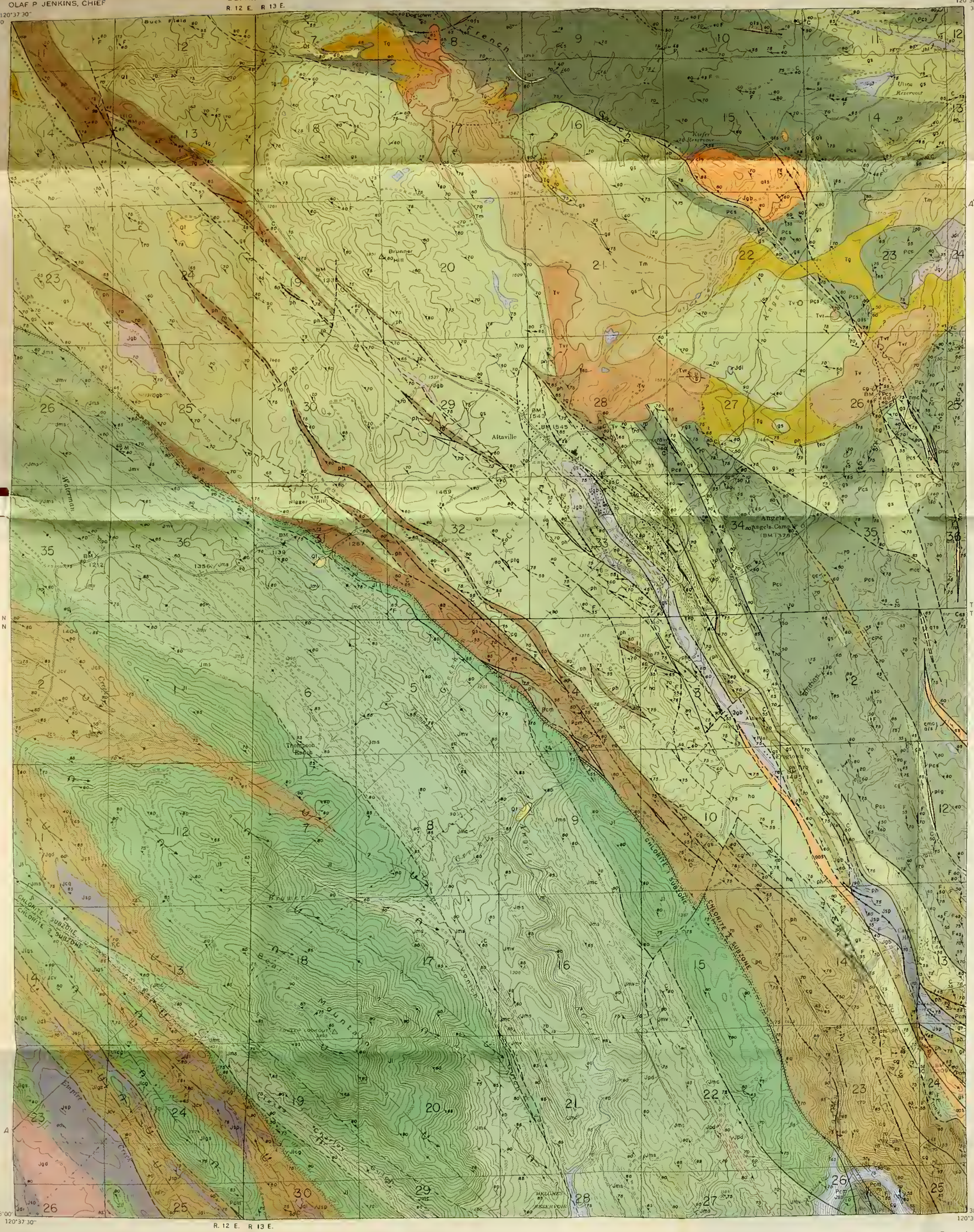
Quartz veins, of Jurassic (?) age

X — Gold mine or prospect

X Cu — Other mines or prospects
Letter symbol indicates mineral commodity: copper, Cu; chromite, Cr; asbestos, a; iron, Fe.

Limestone quarry

Hydraulic cut



Topographic base by Geological Survey, 1945.
SE quarter of San Andreas quadrangle
enlarged from 1 62,500 to 1 24,000.

Geology by John H Eric and
Arvid A. Stromquist, 1946–47

EXPLANATION

QUATERNARY

Recent

Ql — **Tailings**
Gravel and sand washed from dredging, hydraulicking, and milling operations.

UNCONFORMITY

TERTIARY

Miocene and Pliocene

Tm — **Mehrten formation**
Light-gray to dull red hornblende andesite and basalt agglomerate, tuff, breccia, and volcanic conglomerate.

UNCONFORMITY

Miocene (?)

Tvr / Tv — **Valley Springs formation**
Interbedded white to light gray rhyolite tuff and gravel, Tv, containing pebbles and cobbles of rocks of pre-Tertiary age. Rhyolite tuff, Tvr, overlies the interbedded tuff and gravel in places

UNCONFORMITY

Eocene (?)

Tg — **River gravel**
River gravel and sand, containing pebbles and cobbles of rocks of pre-Tertiary age.

UNCONFORMITY

JURASSIC OR CRETACEOUS

Upper Jurassic or Lower Cretaceous (post-Mariposa) (sequence uncertain)

Jgr — **Granite**
Quartz, albite, orthoclase, muscovite, biotite, sericite, epidote, and sphene.

Jgd — **Granodiorite**
Albite, sericite, epidote, quartz, orthoclase, hornblende, chlorite, and sphene. Includes minor diorite.

Jhl — **Hornblende lamprophyre**
Hornblende phenocrysts and albite, chlorite, epidote, and actinolite.

Jpd — **Porphyritic diabase**
Saussuritized plagioclase phenocrysts, and plagioclase, augite, hornblende, magnetite, uddingsite, and leucoxene.

Jdi — **Diorite**
Albite, sericite, epidote, hornblende, chlorite, apatite, and sphene. Includes minor gabbro, hornblendite, granodiorite, ankerite-talc schist, and actinolite schist.

Jgb — **Gabbro**
Saussuritized plagioclase, hornblende, augite, actinolite, chlorite, zoisite, epidote, and sericite. Includes minor diorite and serpentine.

Jsp — **Serpentine**
Chrysotile, xylotile, serpophite, antigorite, chlorite, magnetite, and chromite. Includes minor gabbro, ankerite-talc schist, chlorite schist, and mariposite-sericite schist.

Upper Jurassic

Jmv / Jms / Jmc — **Mariposa formation**
Dark-gray sandy tuff and tuffaceous graywacke, Jmv, contains minor slate. Dark-gray to black slate, Jms, contains minor tuff, graywacke, sandstone, and grit. Local conglomerate, Jmc, at or near base, contains minor grit, tuff, and graywacke.

UNCONFORMITY

Upper or Middle Jurassic
Amador group

Jlgs / Jl / Jls / Jli / Jlcg — **Logtown Ridge formation**
Green massive augite-albite-epidote metaphyre, Jl, derived chiefly from basalt and andesite breccia, agglomerate and tuff. Green schist composed largely of actinolite, albite, epidote, chlorite, and sericite, Jlgs, derived chiefly from basalt and andesite breccia, agglomerate, and tuff. Injection gneiss, Jli, consists of green schist and many thin dikes of diorite and granodiorite. Dark-gray to black slate, Jls. Local conglomerate, Jlcg, at base.

UNCONFORMITY

Jcq / Jcs / Jcv — **Cosumnes formation**
Metavolcanics, Jcv, chiefly thin-bedded tuff, with minor slate. Dark-gray to black slate, Jcs, contains thin-bedded tuff. Quartzite or chert, Jcq, with minor slate.

UNCONFORMITY

CARBONIFEROUS (?)

Pc / Pcm / Pcs — **Calaveras formation**
Largely tectonic breccia, Pc, closely associated with phyllite, or phyllonite and fine-grained quartzose schist, fragments consist chiefly of quartzite, chert, and marble. Blue-gray marble, Pcm, banded in places; small lenses commonly occur in fault zones. Quartz-muscovite schist, Pcs, locally quartz-muscovite-biotite schist.

JURASSIC (?) OR CARBONIFEROUS (?)

gs / ha / rl — **Green schist and related rocks (possibly in part correlated with Logtown Ridge formation)**
Green schist, gs, derived from basaltic and andesitic breccia, agglomerate and tuff. Hornblende andesite, ha, chiefly porphyritic flows and flow breccias; contains minor hornblende dacite. Rhyolite tuff, rl.

UNCONFORMITY (?)

ph / cg / qc / rh — **Phyllite, stretched conglomerate, and related rocks (possibly in part correlated with Cosumnes formation)**
Phyllite and phyllonite, ph, derived from slate, thin-bedded tuff, and conglomerate, with minor tuff and conglomerate, includes some mylonite along faults. Conglomerate with stretched pebbles, cg; minor interbedded phyllite and tuff. Quartzite or chert, qc, with minor phyllite. Rhyolite tuff, rh.

ats / cmc / cls / mcq / qos / ptg — **Rocks formed by hydrothermal alteration**
Ankerite-talc schist, ats; locally includes other minor rocks of hydrothermal origin. Calcite-muscovite-chlorite rock, cmc. Chlorite schist, cls. Muscovite-chlorite-quartz rock, mcq. Quartz-ankerite-sericite schist, qos. Pyritized green schist, ptg; weathered to reddish-brown gossan.

Contact
Dashed where approximately located

Indefinite contact

Concealed contact

Fault or thin shear zone, showing dip
Dashed where approximately located

Concealed fault or thin shear zone

Fault, showing bearing and plunge of slickensides

High-angle normal fault
U, upthrown side, D, downthrown side

Probable fault

Overturned anticline
Showing approximate location of trace of axial plane, direction of dip of limbs, and bearing of axis. Question marks where doubtful.

Overturned syncline
Showing approximate location of trace of axial plane, direction of dip of limbs, and bearing of axis. Question marks where doubtful.

Strike and dip of axial plane of minor fold
Showing bearing and plunge of axis and horizontal projection of fold pattern.

Strike and dip of beds

Strike of vertical beds

Strike and dip of folded beds

Strike and dip of beds and plunge of lineation

Strike of vertical beds and plunge of lineation

Strike and dip of foliation or banding

Strike of vertical foliation

Strike and dip of folded foliation

Bearing and plunge of lineation
For all lineations: crenulations, C; intersection of schistosity and bedding or schistosity and shear cleavage, I; mullions or rolls in schistosity, M; long axis of fragments, F.

Strike and dip of foliation and plunge of lineation

Strike of vertical foliation and plunge of lineation

Strike and dip of foliation and plunge of two lineations

Strike and dip of joints

Strike of vertical joints

Strike and dip of shear cleavage

Strike of vertical shear cleavage

Quartz vein, showing dip

Quartz vein, showing dip, and bearing and plunge of slickensides

Vertical quartz vein

Metamorphic boundary

GEOLOGIC MAP
OF THE
ANGELS CAMP QUADRANGLE
CALIFORNIA

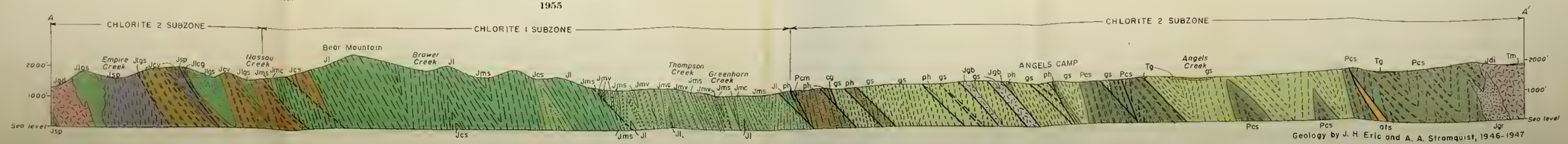
Scale 1:24,000

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

CONTOUR INTERVAL 50 FEET
Datum is mean sea level

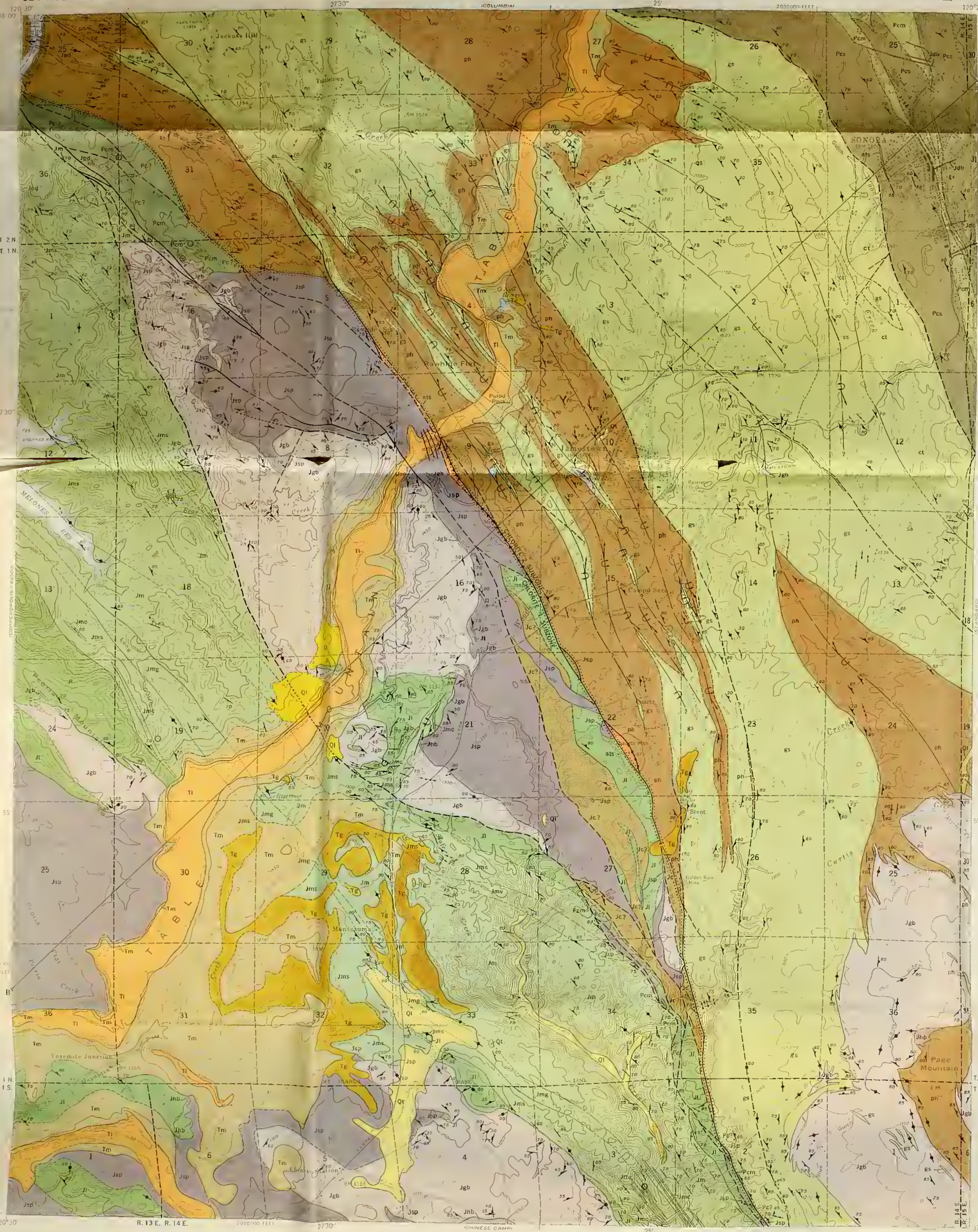
1955

TRUE NORTH
MAGNETIC NORTH
17½°
APPROXIMATE MEAN DECLINATION, 1948



Geology by J. H. Eric and A. A. Stromquist, 1946–1947

SECTION A–A'



Topographic base by the Geological Survey, 1949

Geology by George R. Heyl, Arvid A. Stromquist, C. Melvin Swinney, and John H. Wiese, 1946–48.

EXPLANATION

QUATERNARY — *Recent*

Ql — **Tailings**
Gravel and sand washed from dredging, hydraulicking, and milling operations.

Ql — **Landslide debris**
Composed chiefly of latite

UNCONFORMITY

TERTIARY OR QUATERNARY — *Pliocene or Pleistocene*

Tl — **Latite of Table Mountain**
Dark-gray to black latite containing phenocrysts of labradorite, augite, and olivine in a groundmass of labradorite, augite, olivine, magnetite, apatite, and glass.

UNCONFORMITY

TERTIARY — *Miocene and Pliocene*

Tm — **Mehrten formation**
Light-gray to dull red hornblende andesite and basalt agglomerate, tuff, breccia, volcanic conglomerate, and laminated tuffaceous sandstone, siltstone, and clay.

UNCONFORMITY

Eocene (?)

Tg — **River gravel**
River gravel and sand, containing pebbles and cobbles of rocks of pre-Tertiary age; in places may include reworked deposits of Pleistocene age. Frequently auriferous.

UNCONFORMITY

JURASSIC OR CRETACEOUS — *Upper Jurassic or Lower Cretaceous (post-Mariposa) (sequence uncertain)*

Jdb — **Diabase**
Saussuritized plagioclase, uralitized augite, epidote, apatite, and magnetite.

Jpd — **Porphyritic diabase**
Saussuritized plagioclase phenocrysts and plagioclase, augite, hornblende, magnetite, siddingite, and leucoxene.

Jhb — **Hornblendite**
Hornblende, saussuritized plagioclase, chlorite, epidote, actinolite, and albite.

Jgb — **Gabbro**
Saussuritized plagioclase, hornblende, augite, actinolite, chlorite, zoisite, epidote, and sericite. Includes minor diorite and serpentine.

Jsp — **Serpentine**
Chrysotile, xylotile, serpophite, antigorite, chlorite, magnetite, and chromite. Includes minor gabbro, ankerite-talc schist, chlorite schist, and marsponite-sericite schist.

JURASSIC — *Upper Jurassic*

Jm, Jms, Jmg, Jmv, Jmc — **Mariposa formation**
Mariposa formation, undivided, Jm. Includes slate, sandstone, siltstone, tuff, graywacke, grit, and fine-grained conglomerate. Dark-gray sandy tuff and tuffaceous graywacke, Jmv, contains minor slate. Dark-gray to black slate, Jms, contains minor tuff, graywacke, sandstone, and grit. Graywacke, Jmg. Local conglomerate, Jmc, at or near base, contains grit, tuff, and graywacke.

UNCONFORMITY

Upper or Middle Jurassic — Alnader group

Jl — **Logtown Ridge formation**
Green massive augite-albite-epidote metaphyre, derived chiefly from basalt and andesite tuff, breccia, and agglomerate.

UNCONFORMITY

Jc — **Cosumnes formation**
Volcanics, chiefly thin-bedded tuff and slate, with minor conglomerate and chert beds.

UNCONFORMITY

CARBONIFEROUS (?)

Pcm, Pc, Pcs — **Calaveras formation**
Blue-gray marble, Pcm, banded in places; small lenses commonly occur in fault zones. Largely crush conglomerate closely associated with phyllite or phyllonite, and fine-grained quartzose schist; fragments consist chiefly of quartzite, chert, and marble, Pcf. Quartz-muscovite schist and quartz-actinolite-albite schist, Pcs, is in part interbedded with marble; contains minor conglomerate.

Rocks of uncertain age and correlation

JURASSIC (?) OR CARBONIFEROUS (?)

gs, ss, cl, sl, ag — **Green schist and related rock (Possibly in part correlated with Logtown Ridge formation)**
Green schist, gs, derived from basaltic and andesitic breccia, agglomerate, and tuff. Sericite schist, ss, derived from felsic tuff. Amphibole crystal metatuff, cl. Slate and phyllite, sl. Green massive augite-albite-epidote metaphyre, ag.

UNCONFORMITY (?)

ph, cg — **Phyllite, stretched conglomerate, and related rocks (Possibly in part correlated with Cosumnes formation)**
Phyllite and phyllonite, ph, derived from slate, thin-bedded tuff, and conglomerate, with minor tuff and conglomerate; includes some mylonite along faults. Conglomerate with stretched pebbles, cg, minor interbedded phyllite and tuff.

ots — **Rocks formed by hydrothermal alteration**
Ankerite-talc schist, ots; locally includes other minor rocks of hydrothermal origin.

Contact, showing dip
Dashed where approximately located

Indefinite contact

Concealed contact

Fault or thin shear zone, showing dip
Dashed where approximately located

Concealed fault or thin shear zone

Doubtful or probable fault or thin shear zone
Dotted where concealed

High-angle normal fault
U, upthrown side; D, downthrown side.

Overturned anticline
Showing approximate location of trace of axial plane, direction of dip of limbs, and bearing of axis; dotted where concealed, question marks where doubtful.

Overturned syncline
Showing approximate location of trace of axial plane, direction of dip of limbs, and bearing of axis; dotted where concealed, question marks where doubtful.

Plunge of minor anticline

Plunge of minor syncline

Strike and dip of beds

Strike of vertical beds

Strike and dip of beds and plunge of lineation

Strike and dip of foliation or banding

Strike of vertical foliation

Strike and dip of foliation and plunge of lineation

Strike and dip of joints

Strike of vertical joints

Quartz vein, showing dip

Metamorphic boundary

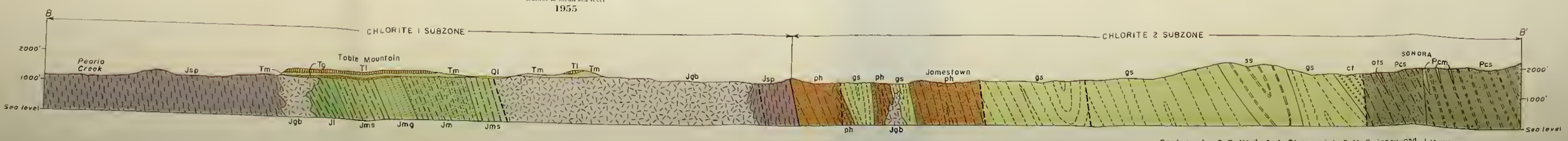
Fossil locality

GEOLOGIC MAP
OF THE
SONORA QUADRANGLE
CALIFORNIA

Scale 1:24,000

CONTOUR INTERVAL 50 FEET
Datum is mean sea level
1955

APPROXIMATE MEAN DECLINATION 1948



SECTION B–B'

Geology by G. R. Heyl, A. A. Stromquist, C. M. Swinney and J. H. Wiese, 1946–1948

120°37'30"
38°07'30"
R. 12 E. R. 13 E.
T. 3 N.
T. 2 N.
THORNE
MALONEY
SAN DOMINGO (JUPITER)
BULLY BOY
HOGATE
McCOYNE
GERMAN RIDGE & JUPITER
JACK RABBIT
ALTAVILLE
VIRGINIA
GARIBALDI
PINE NUT
PANUCA
KEYSTONE
CLIFTON RANCH
CURTIS
CHEROKEE
CROSETTE
YELLOWSTONE
GAS DEPOSIT
SENSON
ROSEWELL
BARNELL
BELMONT OSBORN
MOHAWK
GOLD HILL
WAGON RUT
EVENING STAR
HEELER RANCH
TRIPLE LOOF
LONGWORTH & NUGGET AND MABEL FAY
CURIOSITY
ODEKIA
PURE QUILL
NORTH STAR
CALAVERAS CENTRAL (REINER SHAFT)
AETNA SHAFT
MIKE BROWN
CALMO
CALMO NO. 2
OZARK
KENTUCKY
VAL RANCH
VALLECITO WESTERN
GREAT WESTERN (ULTIMO)
SULTANA & ANDERSON
DEMAREST
ANGELS OCEAN
ANGELS CREEK
DEAD HORSE
BONANZA
JUNIOR (NORTH SHAFT)
ALTA & ALLIANCE
VICA CROSS SHAFT
Angels
Angels Camp P.O.
KEYSTONE
LAST CHANCE
HOLY GHOST
GREENSTONE
MADISON
LAWSONING
WATERMAN
RUSSIA
ORIOLE
BOLTINAT
GOLDEN STAR
STORM KING
BIG SPRINGS
KELLIS
KORNING STAR
MARBLE SPRINGS
ROMAGGI & COSTA
ROMAGGI FAMILY
GOLD HILL
CLAUGE
MISSOURI
COLUMBIA
HARDY
FULLCOON
WHITTLE
VANDERBILT
WEBMER HILL
ALPHA
ROMAN
ROCK
UNION
MORGAN
KEYSTONE
BROWN
CALAVERAS
BLONDES
VONICH
DAVIS
STONE
Utica Reservoir
Kufer Reservoir
Angels Creek
Bear Creek
Mountain
Waterman
Broad
Cosgrove
Coyote
Dry Creek
Cottonwood
Sycamore
Gulch
Thoren Ranch
Mormon
Davis
Gulch
Quiet
Creek
Bear
Creek
Mountain
Cosgrove
Creek
Dry
Creek
Cottonwood
Sycamore
Gulch
Mormon

DIVISION OF MINES
OLAF P. JENKINS, CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SPECIAL REPORT 41
PLATE 4

Topographic base by the Geological Survey, 1949

APPROXIMATE MEAN DECLINATION, 1948

MINES AND PROSPECTS
OF THE
SONORA QUADRANGLE
CALIFORNIA

Scale 1:24,000

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

CONTOUR INTERVAL 50 FEET
Datum is mean sea level
1955

Geology by George R. Heyl, Arvid A. Stromquist, C. Melvin Swinney, and John H. Wiese, 1946–48.

EXPLANATION

QUATERNARY

Recent

Qt — Tailings
Gravel and sand washed from dredging, hydraulicking, and milling operations.

Ql — Landslide debris
Composed chiefly of latite.

UNCONFORMITY

Pleistocene or Pleistocene

Tl — Latite of Table Mountain
Dark-gray to black latite containing phenocrysts of labradorite, augite, and diverse in a groundmass of labradorite, augite, olivine, magnetite, apatite, and glass.

UNCONFORMITY

TERTIARY OR QUATERNARY

Miocene and Pliocene

Tm — Mehrten formation
Light-gray to dull red hornblende andesite and basalt agglomerate, tuff, breccia, volcanic conglomerate, and laminated tuffaceous sandstone, siltstone, and clay.

UNCONFORMITY

TERTIARY

Eocene (?)

Tg — River gravel
River gravel and sand, containing pebbles and cobbles of rocks of pre-Tertiary age, in places may include reworked deposits of Pleistocene age. Frequently auriferous.

UNCONFORMITY

JURASSIC OR CRETACEOUS

Upper Jurassic or Lower Cretaceous (post-Mariposa) (sequence uncertain)

Jdb — Diabase
Saussuritized plagioclase, uralitized augite, epidote, apatite, and magnetite.

Jpd — Porphyritic diabase
Saussuritized plagioclase phenocrysts and plagioclase, augite, hornblende, magnetite, siderite, and [illegible].

Jhb — Hornblendite
Hornblende, saussuritized plagioclase, chlorite, epidote, actinolite, and alb te.

Jgb — Gabbro
Saussuritized plagioclase, hornblende, augite, actinolite, chlorite, zoisite, epidote, and sericite. Includes minor diorite and serpentine.

Jsp — Serpentine
Chrysotile, xylotile, aerophite, antigorite, chlorite, magnetite, and chromite. Includes minor sphene, anthophyllite-talc schist, chlorite schist, and mariposite-sericite schist.

Upper Jurassic

Jm, Jms, Jmg, Jmv, Jmc — Mariposa formation
Mariposa formation, undivided, Jm. Includes slate, sandstone, siltstone, tuff, graywacke, grit, and fine-grained conglomerate. Dark-gray sandy tuff and tuffaceous graywacke, Jms, contains minor slate. Dark-gray to black slate, Jms, contains minor tuff, graywacke, sandstone, and pebbles. Graywacke, Jmg. Local conglomerate, Jmc, at or near base, contains grit, tuff, and graywacke.

UNCONFORMITY

Upper or Middle Jurassic

Amador group

Jl — Logtown Ridge formation
Green massive augite-albite-epidote porphyrite, derived chiefly from basalt and andesite tuff, breccia, and agglomerate.

UNCONFORMITY

Jc — Cosumnes formation
Volcanics, chiefly thin-bedded tuff and slate, with minor conglomerate and chert beds.

UNCONFORMITY

CARBONIFEROUS (?)

Pcm, Pc, Pcs — Calaveras formation
Blue-gray marble, Pcm, banded in places; small lenses consistently occur in fault zone. Fan-gray crush conglomerate closely associated with phyllite or phyllonite, and fine-grained quartzose schist; fragments consist chiefly of quartzite, chert, and marble, Pcf. Quartz-muscovite schist and quartz-actinolite-albite schist, Pcs, is in part interbedded with marble; contains minor conglomerate.

JURASSIC (?) OR CARBONIFEROUS (?)

Rocks of uncertain age and correlation

gs, ss, cl, sl, ag — Green schist and related rock
(Possibly in part correlated with Logtown Ridge formation)
Green schist, gs, derived from basaltic and andesitic breccia, agglomerate, and tuff. Sericite schist, ss, derived from felsic tuff. Amphibole crystal metatuff, cl. Slate and phyllite, sl. Green massive augite-albite-epidote metaphyre, ag.

UNCONFORMITY (?)

ph, cg — Phyllite, stretched conglomerate, and related rocks
(Possibly in part correlated with Cosumnes formation)
Phyllite and phyllonite, ph, derived from slate, thin-bedded tuff, and conglomerate, with minor tuff and conglomerate, includes some mylonite along faults. Conglomerate with stretched pebbles, cg; minor interbedded phyllite and tuff.

als — Rocks formed by hydrothermal alteration
Ankerite-talc schist, als, locally includes other minor rocks of hydrothermal origin.

EXPLANATION

Contact, showing dip
Dashed where approximately located

Indefinite contact

Concealed contact

Fault or thin shear zone, showing dip
Dashed where approximately located

Concealed fault or thin shear zone

Doubtful or probable fault or thin shear zone
Dashed where concealed

High-angle normal fault
U, upthrown side, D, downthrown side.

Overturned anticline
Showing approximate location of trace of axial plane, direction of dip of limbs, and bearing of axis; dotted where concealed, question marks where doubtful.

Overturned syncline
Showing approximate location of trace of axial plane, direction of dip of limbs, and bearing of axis; dotted where concealed, question marks where doubtful.

Plunge of minor anticline

Plunge of minor syncline

Strike and dip of beds

Strike of vertical beds

Strike and dip of beds and plunge of lineation

Strike and dip of foliation or banding

Strike of vertical foliation

Strike and dip of foliation and plunge of lineation

Strike and dip of joints

Strike of vertical joints

Quartz vein, showing dip

Metamorphic boundary

Fossil locality

Tertiary gravels, tuffs, and lavas

Indicates approximate position of Mother lode belt

Gold mine or large open cut

Small shaft, prospect pit, quarry, or open cut (gold unless otherwise indicated)

Portal of adit

Asbestos prospect

Chromite prospect

Marble quarry

Talc prospect

Tabulation of gold lode mines and prospects Sonora Quadrangle, California

[Compiled chiefly from records of the California State Division of Mines and from various Federal publications]

*Named on map

Name of mine, prospect or shaft	Location Sec.	T.	R.
*Alabama	9	1 N.	14 E.
*Alameda	5	1 N.	14 E.
Albion Cons.	2	1 S.	14 E.
Claims: Hardrack, Bob, Defender, Farrington, Great Eastern			
Alhambra	31	2 N.	14 E.
Allen	19	1 N.	14 E.
*Anderson	2	1 S.	14 E.
Anti-Chinese	33	2 N.	14 E.
*App.—See Pacific Coast Gold Mines Corp.	22	1 N.	14 E.
App & Heslep Mining Co.—See Pacific Coast Gold Mines Corp.	22	1 N.	14 E.
*Arbona	32	2 N.	14 E.
Atlas (Patterson, Waters)	30	2 N.	14 E.
Claims: Atlas, Soldier Gulch, Triangle, Triangle Fraction			
Badger (1)	18	1 N.	14 E.
Badger (2)	13	1 N.	14 E.
Beckwith & Saunders	36	2 N.	13 E.
*Belcher	2	1 S.	14 E.
*Bell	30, 31	2 N.	14 E.
Bella Union	1	1 S.	14 E.
Belmont	25	2 N.	14 E.
*Black Slate	31	2 N.	14 E.
Bluett & McCaddie (Carrington)	30	2 N.	14 E.
*Bonanza	36	2 N.	14 E.
Claims: Big Bonanza, Little Bonanza			
Brown Bird	2	1 S.	14 E.
Buena Vista	29, 31	2 N.	14 E.
*Cardinelle (Jackson Flat & Parallel)	29	2 N.	14 E.
Carlin	10, 15	1 N.	14 E.
Claims: Carlin Ranch			
Carrington	25	2 N.	13 E.
Claims: Chileno, Santiago, Rice & Lyons, Stocker, Wilson & Mason, Gillis & Fry, East Chance II, Pine Tree, Bluett, Carrington, Street Ext., Strenchfield	29, 30	2 N.	14 E.
Chantreau	7	1 N.	14 E.
*Chileno—See Carrington	30	2 N.	14 E.
*Climax	2	1 S.	14 E.
Cloudman—See Erin-go-Bragh	27	1 N.	14 E.
Colby (East Chance I)	35	2 N.	14 E.
Claims: Fairview			
Combination—See O.K.	32	2 N.	14 E.
Coughlin	30	2 N.	14 E.
Cowan	36	2 N.	14 E.
*Crystalline	9	1 N.	14 E.
Claims: Crystalline, Shore, Juniata, Harris & Oliver, Ophir, Winnie			
*Defender—See Albion Cons.	2	1 S.	14 E.
Darrow	5	1 N.	14 E.
*Dickey Boy	12	1 N.	14 E.
	7	1 N.	15 E.
Donovan—See Vulture	16	1 N.	14 E.
Dorsey	35	2 N.	14 E.
*Dutch—See Pacific Coast Gold Mines Corp.	22, 23	1 N.	14 E.
Claims: Dutch, Sweeney			
East Lode (East Lode)	32	2 N.	14 E.
*Erin-Go-Bragh & Cloudman	27	1 N.	14 E.
Eureka	35	2 N.	14 E.
*Fairview (Little Bonanza)—See Bonanza	36	2 N.	14 E.
Fisher	31	2 N.	14 E.
Florence	33	2 N.	14 E.
*Gagnere	32	2 N.	14 E.
Gandolfo & Rocca	37	1 N.	14 E.
Gerrymander Cons.	1	1 N.	14 E.
Gillis	30	2 N.	14 E.
Gold Leaf—See Mountain View (1)	31, 32	2 N.	14 E.
Gold Ridge Mining Co.—See Tarantula (2)	1, 2	1 S.	14 E.
*Golden Gate	1	1 N.	14 E.
Claims: Golden Gate, Golden Sulphuret, Golden Sulphuret Ext.			
Golden Nugget	2	1 S	14 E.
*Golden Rule—See Jumper	26, 27, 35	1 N.	14 E.
Grand Turk	29	2 N.	14 E.
*Grey Eagle—See Santa Ysabel	27	1 N.	14 E.
Greenstone	35	1 N.	14 E.
Gross—See Gross-Street Mining Co.	29, 30	2 N.	14 E.
*Gross-Street Mining Co.	29, 30	2 N.	14 E.
Claims: Gross, Shaw & Scholler, Street			
Harris	16	1 N.	14 E.
Harris & Oliver (Winnie)—See Crystalline	9	1 N.	14 E.
*Harvard	16	1 N.	14 E.
Claims: McCann, Mooney, Trio, Whiskey Hill, Sobrante, Pacific, Vulture			
*Heslep—See Pacific Coast Gold Mines Corp.	22	1 N.	14 E.
*Hess	24	1 N.	14 E.
*Hitchcock (Senator Mining Co.) See Coast Gold Mines Corp.	22	1 N.	14 E.
Imperial	32	2 N.	13 E.
Independence (4)	26	2 N.	14 E.
Isabella & Gem	5	1 N.	14 E.
Jackson (Est & Parallel)—See Cardinelle	29	2 N.	14 E.
John Moore	30	2 N.	14 E.
John Ore	30	2 N.	14 E.
Jones	25	2 N.	13 E.
*Jumper	26, 27, 35	1 N.	14 E.
Claims: Jumper, New Era, Golden Rule, Began Ranch			
Kaiser	25	2 N.	14 E.
King Solomon	32	2 N.	14 E.
Knox & Boyle—See Santa Ysabel	27	1 N.	14 E.
Last Chance I—See Colby	36	2 N.	14 E.
Last Chance II—See Carrington	30	2 N.	14 E.
Last Chance III	13	1 N.	14 E.
Last Lode—See East Lode	32	2 N.	14 E.
Lead & Iem O'Shanter	31, 32	2 N.	14 E.
Claims: Toledo Cons., Buena Vista			
Little Bonanza—See Bonanza	36	2 N.	14 E.
Little Gem (Harris)	16	1 N.	14 E.
[illegible]	[illegible]	[illegible]	[illegible]
Lookout—See Pena Blanco	6	1 N.	14 E.
Lucky Star—See Pena Blanco	6	1 N.	14 E.
McCann—See Harvard	16	1 N.	14 E.
Madrid	29	2 N.	14 E.
*Malone	34	1 N.	14 E.
Mangosia	10, 15	1 N.	14 E.
Manzanita	1, 2	1 N.	14 E.
Mark Twain Mining Co.—Incorps. claims of Nevada Wonder Mining Co.	30	2 N.	14 E.
*Marryatt	32	2 N.	14 E.
Marryatt North Ext.	29, 32	2 N.	14 E.
Mascot (2)	10	1 N.	14 E.
May & Hunter	36	2 N.	14 E.
*Mazeppa	32	2 N.	14 E.
*Miller & Holmes—See Santa Ysabel	27	1 N.	14 E.
*Mooney—See Harvard	16	1 N.	14 E.
Mother Lode	32	2 N.	14 E.
Mountain View (1) (Gold Leaf)	31, 32	2 N.	14 E.
Mountain View (2)	3	1 S.	14 E.
Nevada Wonder Mining Co.	30	2 N.	14 E.
Claims: Chileno, Carrington Rice, Santiago, Stocker, J. A., J. A. Gillis, Wilson & Mason, Pine Tree, East Chance			
New Era—See Jumper	26	1 N.	14 E.
New G. T. Mine—See New Grand Turk	29	2 N.	14 E.
New Grand Turk (New G. T. Mine)	29	2 N.	14 E.
Neubaumer	29	2 N.	14 E.
*Nugget	35	1 N.	14 E.
Nut Pine	32	2 N.	14 E.
*Nyman Cons.—See Santa Ysabel Cons.	22	1 N.	14 E.
*O.K.	32	2 N.	14 E.
Claims: O.K., Combination, O.K. North Ext.	5	1 N.	14 E.
O'Donnell	15	1 N.	14 E.
Olsen	32	2 N.	14 E.
*Omega (Red Cross)	9	1 N.	14 E.
Claims: Omega, Table Mt. Gravel, Omega General Hooker			
Ophir (1)	9	1 N.	14 E.
*Patterson	29	2 N.	14 E.
Pacific			
Pacific Coast Gold Mines Corp.			
Took under option: App, Dutch, Sweeney, Hitchcock, Heslep Mines			
*Patterson	29	2 N.	14 E.
Claims: Patterson, Lennon, Atlas			
Pena Blanco	6	1 N.	14 E.
Claims: Pena Blanco, Doctor, Lookout, Lucky Star, Sarah Francis			
Pine Ridge	16	1 N.	14 E.
Pine Tree—See Carrington	30	2 N.	14 E.
Point Rock	13, 24	2 N.	13 E.
Pride of Tuolumne	31	2 N.	14 E.
*Prospect	6	1 N.	14 E.
Punter	12	1 N.	14 E.
*Rappahannock	5	1 N.	14 E.
*Rawhide	4, 5	1 N.	14 E.
	8, 9		
Rawhide No. 2	9	1 N.	14 E.
Red Cross—See Omega	9	1 N.	14 E.
Reitz Group—See Tarantula (2)	2	1 S.	14 E.
Relief & Surplus	29, 30, 32	2 N.	14 E.
Rice & Lyons—See Carrington	30	2 N.	14 E.
Ritchie	32	2 N.	14 E.
Ross	31	2 N.	14 E.
*San Giuseppe	35	2 N.	14 E.
*Santa Ysabel Cons.	27, 22	1 N.	14 E.
Claims: Nyman, Knox & Boyle, Miller & Holmes, Gray Eagle, Bastian Ranch Rights			
Santiago—See Carrington	30	2 N.	14 E.
Sarah Francis—See Pena Blanco	6	1 N.	14 E.
Senator Mining Co.—See Hitchcock	22	1 N.	14 E.
Shaw & Scholler—See Street. Also see Gross-Street Mining Co.	29	2 N.	14 E.
Shell Ranch	17	1 N.	14 E.
*Shore	10	1 N.	14 E.
Sobrante	16	1 N.	14 E.
Sonora Wonder	36	1 N.	14 E.
Stenchfield—See Carrington	30	2 N.	14 E.
Street (Shaw & Scholler)—See Gross-Street	29	2 N.	14 E.
See Gross-Street			
Claims: Eleanor			
*Sweeney—See Dutch	15	1 N.	14 E.
Sweeney	32	2 N.	14 E.
Tom O'Shanter (Lead & Iem O'Shanter)	31, 32	2 N.	14 E.
Trio	36	2 N.	14 E.
Claims: Fancy			
*Tuolumne	5	1 N.	14 E.
Claims: Tarantula, Tarantula West Ext.	32	2 N.	14 E.
Tarantula (2) (Reitz Group, Jones-Tarantula)	2	1 S.	14 E.
Claims: Tarantula, Lone Star, Omega, Western Ext., Golden Horse Shoe, Bladder Deep, Tarantula Hawk, Gold Ridge			
Tarantula Hawk—See Tarantula (2)	2	1 S.	14 E.
Toledo	31	2 N.	14 E.
Vulture—See Harvard	16	1 N.	14 E.
Union	31	2 N.	14 E.
Vulture	25	2 N.	14 E.
Vulture (Donovan)	15, 16	1 N.	14 E.
Wm. Jones Atlas	30	2 N.	14 E.
Whiskey Hill Mine—See Harvard	16	1 N.	14 E.
*Wickham	32	2 N.	14 E.
Wilson & Mason—See Carrington	30	2 N.	14 E.
Winnie—See Crystalline	9	1 N.	14 E.
Worcester (1)	32	2 N.	14 E.

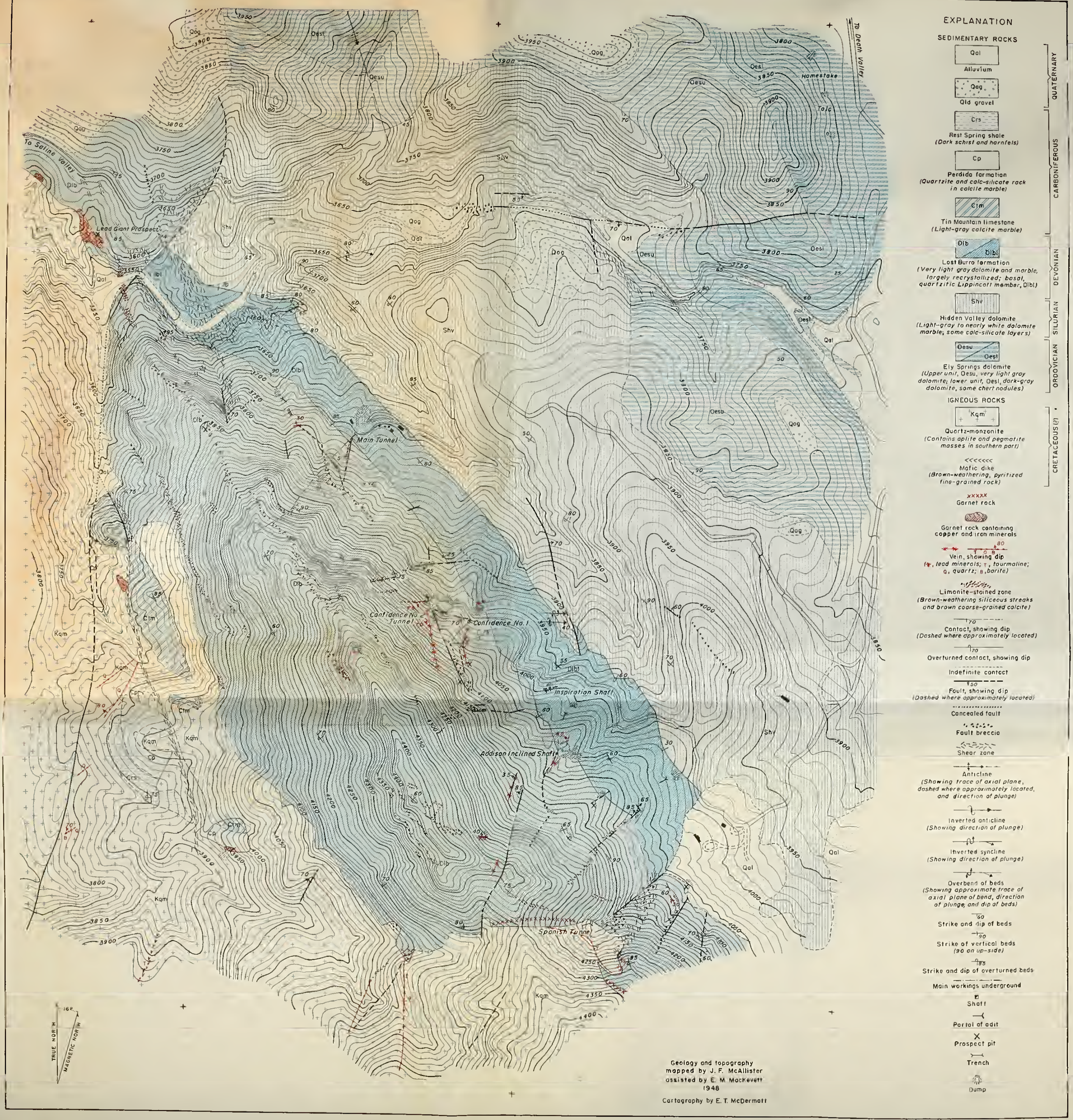
Tabulation of placer gold mines and prospects Sonora Quadrangle, California

*Named on map

Name of mine, prospect or shaft	Location Sec.	T.	R.
App		1 N.	14 E.
Bedrock Blue Gravel (Virginia)	27	2 N.	14 E.
Claims: Saratoga, Gold Hunter, Jefferson			
Best Twenty	17	3 N.	14 E.
Boston	27	2 N.	14 E.
Buckeye (Rosedale Gravel)	27, 34	2 N.	14 E.
Claims: Buckeye Placer			
*Habacker	20	1 N.	14 E.
Hoag, Dick & Kent	32	1 N.	14 E.
*Humbug Gravel—See New York	27, 34	2 N.	14 E.
Jamestown & Comet—See New York	4	1 N.	14 E.
Claim. Comet Placer			
McKinley	17	1 N.	14 E.
Montezuma Tunnel	20	1 N.	14 E.
*New York	4	1 N.	14 E.
Claims: Humbug, Helen A, Jamestown & Comet, Rawhide			
*Punchbowl	20	1 N.	14 E.
Claim: Punchbowl Placer			
Rawhide	4, 5	1 N.	14 E.
Claims: Rawhide, Rawhide Ranch Placer, Rawhide No. 2, Keegan, Nevells Placer, Martin Placer, Ballard Placer			
Rawhide No. 2—See Rawhide	9	1 N.	14 E.
Rawhide Ranch—See Rawhide	4, 9	1 N.	14 E.
Red Hill	29	1 N.	14 E.
Rimm Cam		1 N.	14 E.
Rosedale Gravel—See Buckeye	27, 34	2 N.	14 E.
Rough & Ready	30, 31	1 N.	14 E.
Table Mt. & Alpha	25, 26	1 N.	13 E.
Ventura Grubstake	19, 20	1 N.	14 E.
	29		
Virginia—See Bedrock Blue Gravel	27	2 N.	14 E.

Tabulation of mines and prospects, other than gold, Sonora Quadrangle, California

Name of mine, prospect or shaft	Location Sec.	T.	R.
Asbestos			
Rawhide Asbestos Claims 1, 2, 3	5	1 N.	14 E.
Beryl			
Jamestown	10	1 N.	14 E.
Chromite			
Annex—See Rough & Ready	25	1 N	13 E.
Beckwith Ranch Mines	1	1 S.	13 E.
Claims: Booker Lease, Rose A., Mapes O'Hara, Fagan			
Booker Lease—See Beckwith Ranch Mines			
Eggling & Williams	4, 5	1 S.	14 E.
	8, 9		
Fagen Lease—See Beckwith Ranch Mines	1	1 S.	13 E.
Grassely Claims	25	1 N.	13 E.
Claims: Horseshoe, Morning Glory, May Faction, Last Chance			
Horseshoe (Pedro Claim)—See Grassely Claims	25	1 N.	13 E.
Kahl (Quigg)	6	1 N.	14 E.
Last Chance—See Grassely Claims	25	1 N.	13 E.
Lopez Lease (May Faction)	25	1 N.	13 E.
*Mackey (Mahl, Peter)	21	1 N.	14 E.
Mahl, Peter (Mackey)	21	1 N.	14 E.
*Mapes-O'Hara—See Beckwith Ranch Mines	1	1 S.	13 E.
May Faction (Lopez Lease)—See Grassely Claims	25	1 N.	13 E.
Morning Glory—See Grassely Claims	25	1 N.	13 E.
Pedro Lease (Horseshoe)—See Grassely Claims	25	1 N.	13 E.
*Perconi Ranch	5	1 S.	14 E.
Pereira (Doolar lease)	25	1 N.	13 E.
[illegible]	34	1 N.	13 E.
*Quigg (Kahl)	6	1 N.	14 E.
*Richards—See Rough & Ready Annex	25	1 N	13 E.
Rose A.—See Beckwith Ranch Mines	1	1 S.	13 E.
Rough & Ready (Annex, Richards)	25	1 N.	13 E.
Rowe & Switzer	5	1 N.	14 E.
Shaler lease (Pereira Mine)	36	1 N.	13 E.
*Sims	5	1 S.	14 E.
*Sullivan & Kahl	25	1 N.	13 E.
Sunday	5	1 N.	14 E.
Copper			
Greenstone—See Mann Copper	28	1 N.	14 E.
Kahl Ranch	6, 7	1 N.	14 E.
Mann Copper Mine	27, 28	1 N.	14 E.
Claims: Red Mt. Iron Mine, Greenstone Copper Mine, Copper King Copper Mine			
*Mackey (Ohio Diggins)	21, 28	1 N.	14 E.
Montezuma Iron & Copper Mines	4, 5	1 S.	14 E.
Ohio Diggins (Mackey)	21, 28	1 N.	14 E.
Shell Ranch	17	1 N.	14 E.
Limestone			
*Pacific Lime & Plaster Co.	1	1 N.	14 E.
Claims: Ed Rudolff, Louis Reitz, Bedpley Stone Entry			
U. S. Lime Products Co.	1	1 N.	14 E.
Magnesite			
*Mackey (Mahl, Peter)	6	1 S.	14 E.
*Mahl, Peter (Mackey)	6	1 S.	14 E.
Claims: Sunshine, Snow Drift			
Monarch	6	1 S.	14 E.
*Pinch Bow Magnesite	6	1 S.	14 E.
Talc and Soapstone			
Brown, B.	36	2 N.	14 E.
Finch, W. E.	35	2 N.	14 E.
Turner, A. D.	36	2 N.	14 E.
Whitney, John L.		1 N.	14 E.

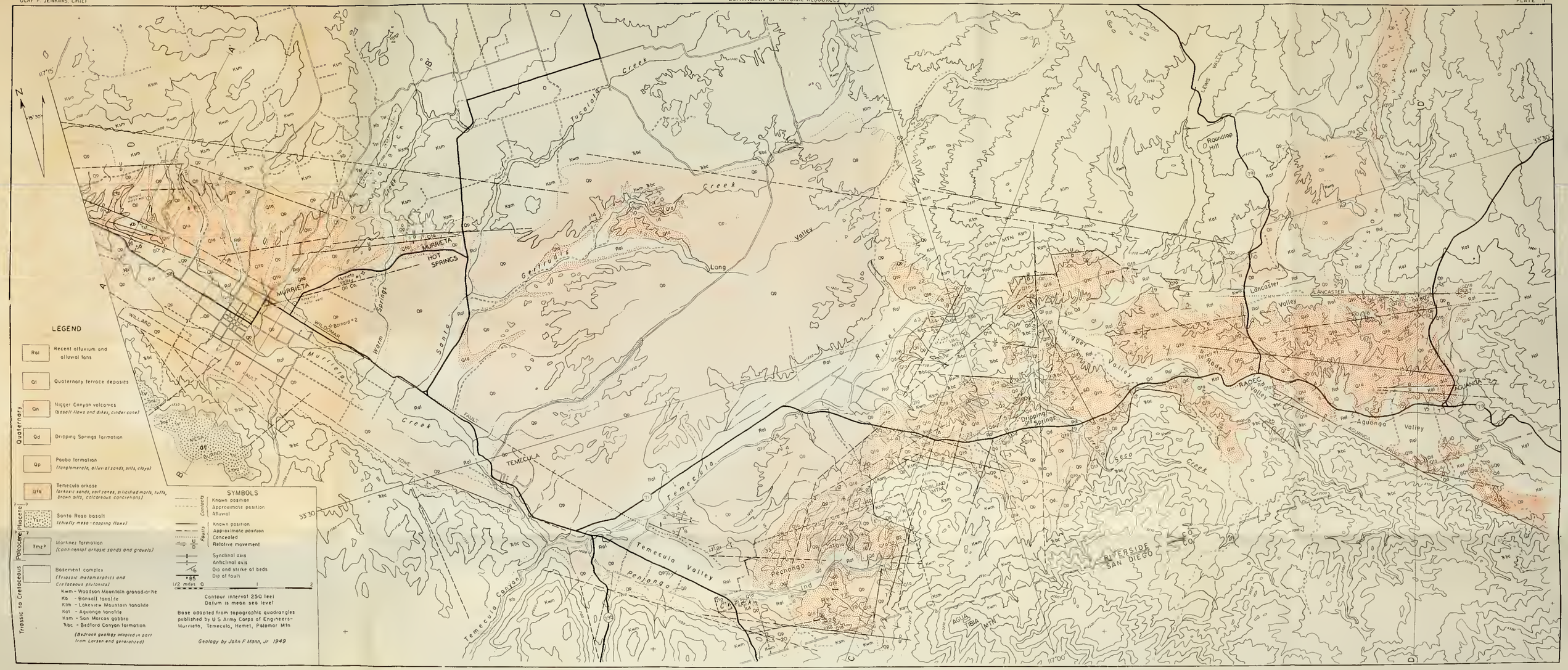


GEOLOGIC AND TOPOGRAPHIC MAP OF THE LIPPINCOTT MINE AREA, INYO COUNTY, CALIFORNIA

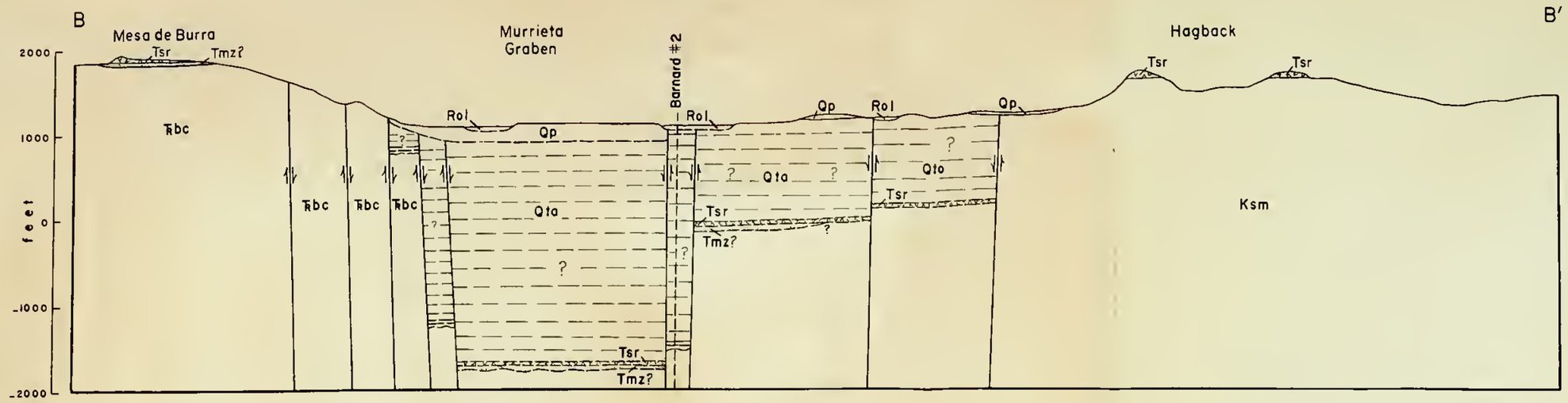
GEOLOGIC AND TOPOGRAPHIC MAP OF THE LOST BURRO MINE AREA, INYO COUNTY, CALIFORNIA

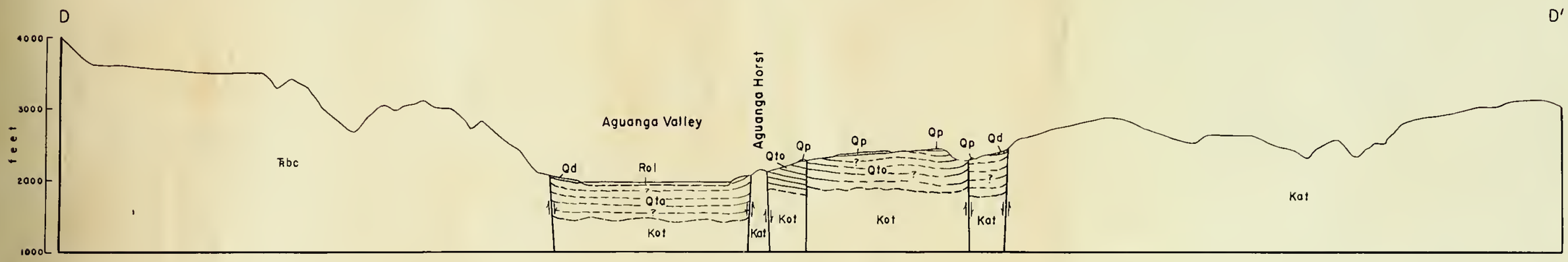
0 100 200 300 400 Feet

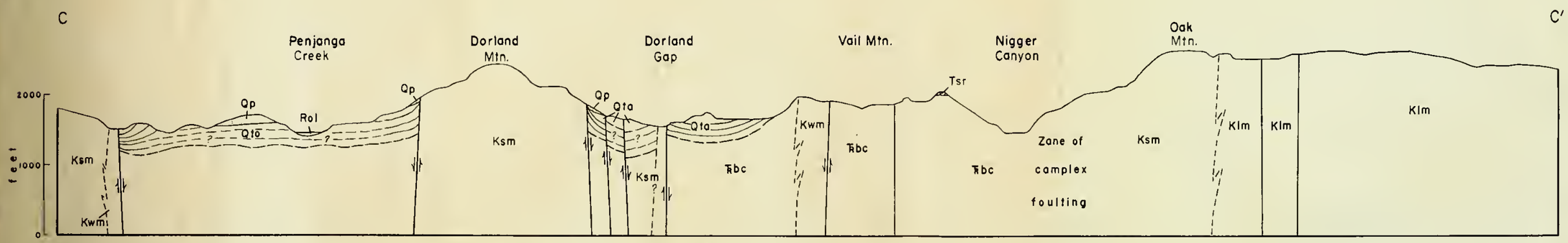
Contour interval 10 feet
Datum is roughly 50 feet above sea level

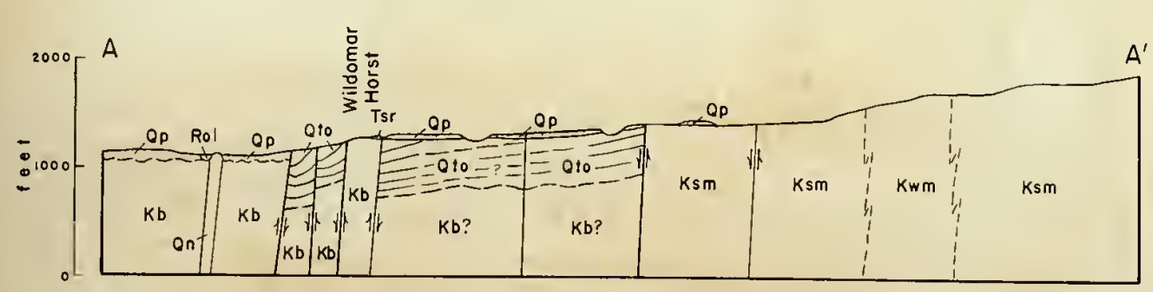


GEOLOGIC MAP OF THE TEMECULA REGION, RIVERSIDE COUNTY, CALIFORNIA









STRUCTURE SECTIONS TEMECULA REGION

0 1 2 Miles

Datum is mean sea level

For location and legend see Pl. I

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